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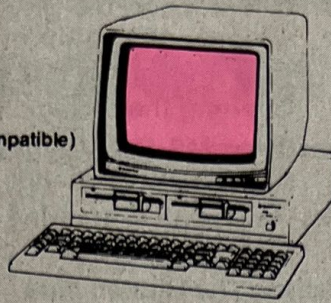
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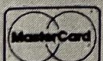
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The Monthly Magazine for
Sanyo Personal Computer Users

Vol. I, Issue 10

May 1985

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- The small disk symbols appearing beside features and regular columns indicate that the program listings with those articles are on this month's **SOFT SECTOR ON DISK**, ready to LOAD and RUN. For full details, see the **SOFT SECTOR ON DISK** ad on Page 35.

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Of course you may be able to "force fit" your application into some existing canned package you have, but to really be flexible you need a separate program for your special purpose.

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LETTERS TO THE EDITOR

PAR
AVION

THE MIGHTY DOLLAR

Editor:

Although based in the U.K., I thought I should respond to your reader survey, especially since I have found **SOFT SECTOR** so helpful in understanding the **MBC-550**. I am only sorry that the exchange rate is down on the pound at the moment. Otherwise, I should have made a couple of purchases despite the difference.

Even so, I have found **SOFT SECTOR** to be worth every penny we have to pay for it here. My best wishes for the future.

W. Connor
University of Liverpool
Liverpool, England

SEARCHING IN CINCI

Editor:

I am attempting to start a Sanyo users group in the Cincinnati, Ohio, metropolitan area. Anyone interested in such a group should contact me at (513) 831-6799.

Tim Mullen
Loveland, OH 45140

THE GREAT ESCAPE

Editor:

Thanks for passing along the tips for inputting control codes to a printer from DOS. Given this start, I was able to develop a table of other codes for my Panasonic, which is Epson compatible.

There is an easier way than experimenting, however, to determine the codes. Most printing manuals will give the Escape sequences needed to change printer modes. They look something like this: ESC + W + 1. That translates into inputting ^[W1^Z from the keyboard to switch the Epson to double-wide print. By now it is apparent

that ^[is equivalent to ESC. The ^Z is merely used to tell the computer that we are done with the COPY CON PRN operation, so we type that in addition to the character sequence listed in the manual.

I hope this will help some of your readers to develop their own table of codes. I keep mine in a .DOC file that I TYPE to the screen whenever I cannot remember them.

Orrin B. Iseminger
Colton, WA

CHAIRMAN OF THE BOARD

Editor:

I purchased Microsoft *Word* with the intention of using it on my **MBC-555** (256K) Sanyo equipped with the Video RAM Board. Unfortunately, I haven't been able to get it to work. If there is a patch available that you or any of your readers know of, please pass the info to me at: Box 522, Ft. Huachuca, AZ 85613.

Here is a list of programs that I have verified will run on the Sanyo **MBC-555**:

<i>PeachText 5000</i>	(Requires VB)
<i>Knowledgeman</i>	(Requires VB)
<i>PC-Write</i>	(Requires VB)
<i>Norton Utilities</i>	(Requires VB)
<i>Multiplan</i>	
<i>Turbo PASCAL</i>	
<i>Friday</i>	
<i>dBASE II</i>	

Gregory Morrison
Ft. Huachuca, AZ

THANKS FOR THE MEMORIES

Editor:

Thank you for publishing David Neuen-dorf's article on "Color Mixing On The

Sanyo Palette" (February '85, Page 8). The article provides excellent demonstrations of the versatility of the Sanyo 550 series' graphics capabilities and some very elegant programming techniques. In case users of 128K and 192K systems want to peep through the doors of the 256K environment, the 256K version of Dave's demonstration will run on any system with at least about 25,775 bytes of memory displayed when BASIC is loaded, provided the following changes are made in the 256K program.

Add a Line 1 to read:

1 CLEAR, ,1067 :LOCATE 1,1,0

Change Line 20 to read:

20 DIM HEXAGON(60),
POSITION(2,60),
PALLETTE(4017)

Change Line 400 to read:

400 GET(120,8)-(505,116),
PALLETTE

Thanks for providing us Sanyo users with a very informative magazine, as well as an effective medium through which we can exchange information.

Thom Harris
Hockley, TX

DISCHARGE IS FALSE, YA' HONOR!

Editor:

An interesting problem came up when I purchased a Smith Corona D200 printer and attached it to my **MBC-550** using the parallel interface port. I noticed that I would get a double character printed in my output, seemingly at random.

After trying everything to isolate the problem, I finally called the SCM engineers in New York. Before I could finish explaining the problem, I was asked if my D200 was connected to a Sanyo 550/555. The SCM

Continued on page 68



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SOFT SOAPBOX

Some of you may still be unaware that there have been some major changes taking place in the management structure of Sanyo's Computer Division. Arthur Shebar, whose name has become familiar to many of you, has been replaced by Edward Goulart as National Sales Manager. Goulart is joined by Sandy Waters as Marketing Manager and Charles Gamer as the Eastern Regional Sales Manager. With this new management team, Sanyo is touting a new image and a new philosophy: to bring technology to market faster and give the end user and dealer a set of solid reasons to choose Sanyo.

The new management team has some very definite ideas about the direction that Sanyo's Computer Division will be taking. They are making plans to unveil a comprehensive marketing package to dealers and distributors at the Spring COMDEX show, May 6 in Atlanta, Georgia. After that time, I'm sure we will be hearing more about the new team's ideas and we certainly wish them success in bringing the Sanyo line of computers the recognition they deserve.

Before I move along to some of the results of the reader survey, I want to mention something else that qualifies as important news to a lot of people judging by the number of requests that we've received for it. On Page 59 of this issue, you will see an introductory ad for our new hard-cover magazine binders, ready to give protection to sets of SOFT SECTOR on desks around the world. I won't use the soapbox for a sales pitch, but I can't help but say that they really do look great and we're proud of them. If you refer to your back issues even a tenth as often as I do, you're going to be impressed.

Now let's take a look at some of the results from the surveys.

Of interest to the largest number of you will probably be the figures on system configurations, so I will cover those now and save the rest for the future. For me, there were several areas of surprise. For instance, with more than 2,000 readers responding to the survey, 66 percent have 256K in their machines, 29 percent are still at 128K, but surprisingly, what rounds off to only about one percent have upgraded to 512K — only a handful of the 2,000 respondents.

As for disk drives, a combined total of 35 percent of the 550/555 systems among the readers are using either one or two single-sided drives, while 59 percent have double-sided drives, nearly all with two. This leaves six percent of the readers using systems with 80-track drives and, again, I find it surprising that not a single person in our sampling is using a hard disk on their 550.

Brushing right along, according to the survey a full 72 percent of the readers are using monochrome monitors. MS-DOS Version 2.11 is being used by 54 percent, compared to 31 percent using Version 1.25 and 15 percent divided among the other operating systems on the market. Thirty-four percent of the readers responding own a modem, with 11 percent subscribing to CompuServe and one or two percent each to the other major electronic mail and information networks.

I'm going to have to stop now before all of these percentages get too dizzying. Next month we will continue from here and look at some of the things that you, the readers, are interested in, your opinions of the magazine, and how some of these things may affect the future direction and content of SOFT SECTOR.

— Kevin Nickols

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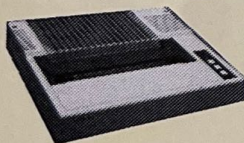
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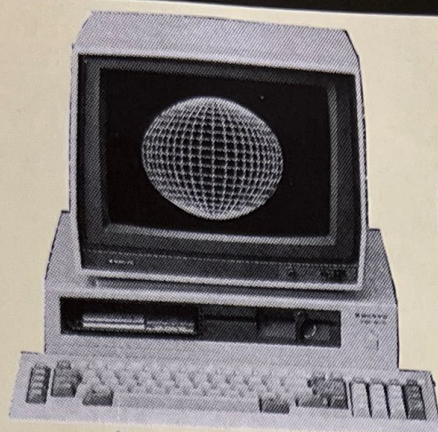
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Bill Sudbrink, Byte Magazine

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To quote PC magazine, "The (NP) printer is a sure thing if it falls into your price range - and even if it doesn't, it may be worth considering."

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\$344

If you've had the nagging suspicion lately that your memory has been failing, this may be the handiest program you've seen since, uh . . .

Tickle Me

By Don Jenkins

If I really want to surprise members of my family on their birthday, I send them a birthday card — on time! My memory (or lack thereof) has gotten me in more hot water than dirty clothes. I've tried everything from reading memory books to leaving notes to myself stuck around everywhere. But it was all to no avail until I tied the notes to something I do almost daily — use my computer. With a "tickler file," as it is sometimes referred to, I can input all of those standard events

(Don Jenkins, a supervisory physicist for the Department of Defense, has been using a Sanyo 550 at home since 1983 in conjunction with an IBM PC in the office. He has written several programs for home and office use, trying to achieve compatibility between the two machines whenever possible. He may be contacted at 10336 Commonwealth Blvd., Fairfax, VA 22032.)

(family birthdays, anniversaries, etc.), as well as any other event which comes up during the year. Then by simply running *Tickler* when I first turn on my computer, I get a reminder of events for the next two weeks within seconds.

The program described here can be used as a tickler or as an appointment book. It has been written to be as user friendly as possible and looks for obvious errors for which you will be scolded by the notorious Sanyo beep. For example, if you try to enter a date with the month greater than 12, the day greater than 31 or a year less than the current year, the computer beeps and prompts you again for a proper date. For most inputs it will ask you "Correct (Y/N)" and give you a chance to correct any errors.

Finally, *Tickler* is written so that it can be compiled if you have access to Microsoft's *BASCOM* (BASIC language COMpiler). This really helps when your message file becomes large and the sorting routine increases. In the compiled version, the sort is done almost instantaneously. Use the "/E" parameter when compiling due to the error trapping routines used in the program.

Also, the program will work with GW-BASIC and IBM BASICA. One sacrifice

had to be made, however, to achieve this compatibility. All color statements use the pair 0,7 or 7,0. If you only plan to use the program uncompiled with Sanyo BASIC and you have a monochrome monitor, you may want to use the color pairs 0,2 and 2,0 instead to reduce the brightness of the printed characters.

The program has several routines which I call "convenience" features. For example, the first thing that happens when you run the program is that it displays today's date and asks you whether it is correct. If you're like me, sometimes when you turn the computer on and get the date prompt, you just hit the RETURN key. The date that is displayed, therefore, will not be today's date.

When you enter the correct date (or enter Yes, the date shown is correct) the program goes to a subroutine at Line 1670 to open the message file. If this is the first time you have run the program, however, a message file has yet to be created. Line 7 is an error trap which will send you to a subroutine which displays the message "No file currently exists. Press any key to create a file." When you press a key, the program sends you to a subroutine to

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enter dates and messages and creates a file for you.

Now, assume you had already started a file so that when you ran the program, a message file existed. When you verified today's date, the program would open and read the message file and display on the screen all messages for today. (A condolence message, "Sorry, no messages," is displayed if none exist.) You will notice that not only is the date displayed, but also the day of the week. This is accomplished by the subroutine at Line 2690 which was provided by Dr. Michael Ecker in the January, 1985 issue of *SOFT SECTOR* (Page 8). You then strike any key and the screen displays your messages for the next two weeks. You are then provided a menu which provides four options in addition to ending the program.

The first option is called "Edit." When you choose this option, you are provided another menu from which you can choose to add entries, change existing entries or delete existing entries. When you are adding entries, you may often want to repeat the same message for several dates or you may

want to enter several different messages for the same date. To accommodate this, you are asked after each entry if you wish another entry, and if so, whether you wish to use the same date, message or neither.

At the conclusion of any of the editing functions, the message file is automatically updated. Before any data is printed to the file, it goes through a sort at Line 2740 to put it in chronological order.

The second option allows you to have messages displayed for any specific date you choose. The third option provides you with a listing in chronological order of all messages in the file. This listing is first provided on the screen. You are then asked whether or not you wish a hard copy. If the answer is yes, the subroutine at Line 2610 provides a listing on your printer.

The fourth option is the one I find most handy. It's a pain to go through at the end of the year and change the date for all of those events which stay the same every year (birthdays, anniversaries, etc.). This option will do that for you. First delete any events or messages which you don't want carried

over to the next year. Then, by selecting this option, all remaining messages will have their dates automatically updated to the next year.

One final word of advice: If the program is to be used in the BASIC mode (non-compiled), it would be very beneficial to use a batch file to facilitate loading. (This approach has been suggested for many of the programs provided in *SOFT SECTOR*.) Save the program under the name *TICKLE.BAS*. Also, make sure that you have *BASIC.EXE* on your disk. In this case the lines to type in from the MS-DOS *A>* prompt would be:

```
COPY CON:TICKLE.BAT
BASIC<"TICKLE.BAS"
```

Next press CTRL and the letter 'Z' at the same time, and then ENTER. You can now load the program straight from DOS just by typing in the word *TICKLE*, and you're set to let the computer keep you out of the doghouse with your friends and on the good side of your relatives.

Now if only I can remember to run the program when I turn on my computer...

The listing: *TICKLE.BAS*

```
1 REM *** TICKLE ME ***
2 REM *** by Don Jenkins ***
3 KEY OFF
5 DIM D$(50):DIM MSG$(50):DIM B(12):DIM A(50)
7 ON ERROR GOTO 1750
10 CLS
20 LOCATE 8,35:PRINT "TICKLE ME":LOCATE 10,39:PRINT "by":LOCATE 12,35:PRINT "Do
n Jenkins"
30 LOCATE 20,1:PRINT "The current date is ";DATE$;"                Is this correct ? (Y/
N)"
40 I$=INPUT$(1)
50 IF I$="Y" OR I$="y" THEN 160
60 IF I$="N" OR I$="n" THEN 80
70 BEEP:GOTO 30
80 PRINT "Please enter correct date (MM/DD/YYYY) or (MM-DD-YYYY)";
90 INPUT DA$
100 IF LEN(DA$)<>10 OR VAL(RIGHT$(DA$,2))<VAL(RIGHT$(DATE$,2)) OR VAL(LEFT$(DA$,
2))>12 OR VAL(MID$(DA$,4,2))>31 THEN 150
110 PRINT "Correct ? (Y/N)":I$=INPUT$(1)
120 IF I$="Y" OR I$="y" THEN DATE$=DA$:GOTO 160
130 IF I$="N" OR I$="n" THEN 80
140 BEEP:GOTO 110
150 BEEP:PRINT "(MM/DD/YYYY) or (MM-DD-YYYY) "":GOTO 90
160 GOSUB 1670:GOSUB 2740
170 GOTO 1970
180 REM *** MENU ***
190 CLS
200 LOCATE 6,25:PRINT "1. EDIT"
210 LOCATE 8,25:PRINT "2. SPECIFIC DATE"
```



```

220 LOCATE 10,25:PRINT "3. LIST"
230 LOCATE 12,25:PRINT "4. UPDATE"
240 LOCATE 14,25:PRINT "5. END"
250 LOCATE 20,20:PRINT "Please choose one of the above"
260 I$=INPUT$(1):I=VAL(I$):IF I<0 OR I>5 THEN 280
270 ON I GOTO 300,2310,2480,1810,290
280 BEEP:GOTO 260
290 CLS:LOCATE 10,34:PRINT "... BYE ...":END
300 REM *** EDIT ENTRIES ***
310 CLS:LOCATE 8,25:PRINT "1. ADD":LOCATE 10,25:PRINT "2. CHANGE":LOCATE 12,25:P
RINT "3. DELETE":LOCATE 14,25:PRINT "4. MENU"
320 LOCATE 20,23:COLOR 0,7:PRINT " CHOOSE ONE ":COLOR 7,0
330 I$=INPUT$(1):I=VAL(I$):IF I<0 OR I>4 THEN 350
340 ON I GOTO 360,830,1330,180
350 BEEP:GOTO 330
360 REM *** ADD ENTRIES ***
370 N=N+1:K=N
380 CLS
390 LOCATE 10,1
400 PRINT "Please enter date for message      (MM/DD/YYYY) or (MM-DD-YYYY)";
410 INPUT D$(K)
420 IF LEN(D$(K))<>10 OR VAL(RIGHT$(D$(K),2))<VAL(RIGHT$(DATE$,2)) OR VAL(LEFT$(
D$(K),2))>12 OR VAL(MID$(D$(K),4,2))>31 THEN 1280
430 LOCATE 15,1
440 PRINT "Please enter message      (maximum of 65 characters)"
450 LINE INPUT MSG$(K)
460 IF LEN(MSG$(K))>65 THEN 1290
470 PRINT :PRINT "Correct ? (Y/N)":I$=INPUT$(1)
480 IF I$="N" OR I$="n" THEN 380
490 IF I$="Y" OR I$="y" THEN 510
500 BEEP:GOTO 470
510 PRINT :PRINT "Another ? (Y/N)"
520 I$=INPUT$(1)
530 IF I$="N" OR I$="n" THEN 560
540 IF I$="Y" OR I$="y" THEN 570
550 BEEP:GOTO 510
560 GOSUB 2740:GOSUB 1580:GOTO 310
570 PRINT :PRINT
580 PRINT "same Date, Message, or Neither ? (D/M/N)":I$=INPUT$(1)
590 IF I$="N" OR I$="n" THEN 360
600 IF I$="D" OR I$="d" THEN 630
610 IF I$="M" OR I$="m" THEN 640
620 BEEP:GOTO 580
630 N=N+1:K=N:D$(K)=D$(K-1):CLS:LOCATE 10,1:PRINT D$(K):GOTO 740
640 N=N+1:K=N:MSG$(K)=MSG$(K-1):CLS:LOCATE 10,1:PRINT MSG$(K)
650 LOCATE 15,1
660 PRINT "Please enter date for message      (MM/DD/YYYY) or (MM-DD-YYYY)";
670 INPUT D$(K)
680 IF LEN(D$(K))<>10 OR VAL(RIGHT$(D$(K),2))<VAL(RIGHT$(DATE$,2)) OR VAL(LEFT$(
D$(K),2))>12 OR VAL(MID$(D$(K),4,2))>31 THEN 1310
690 PRINT "Correct ? (Y/N)"
700 I$=INPUT$(1)
710 IF I$="N" OR I$="n" THEN 660
720 IF I$="Y" OR I$="y" THEN 510
730 BEEP:GOTO 700
740 LOCATE 15,1
750 PRINT "Please enter message      (maximum of 65 characters)"
760 LINE INPUT MSG$(K)
770 IF LEN(MSG$(K))>65 THEN 1290

```



```

780 PRINT :PRINT "Correct ? (Y/N)":I$=INPUT$(1)
790 IF I$="N" OR I$="n" THEN 440
800 IF I$="Y" OR I$="y" THEN 510
810 BEEP:GOTO 780
820 REM *** CHANGE ENTRIES ***
830 CLS:LOCATE 5,1:PRINT "Please enter date of message to CHANGE (MM/DD/YYYY)
or (MM-DD-YYYY)"
840 INPUT CC$
850 IF LEN(CC$)<>10 OR VAL(RIGHT$(CC$,2))<VAL(RIGHT$(DATE$,2)) OR VAL(LEFT$(CC$,
2))>12 OR VAL(MID$(CC$,4,2))>31 THEN 1250
860 PRINT "The following messages are listed for ";CC$
870 PRINT "(Please choose the number of the message to change)"
880 PRINT
890 Q=0
900 FOR I=1 TO N
910 IF LEFT$(CC$,2)<>LEFT$(D$(I),2) OR MID$(CC$,4,2)<>MID$(D$(I),4,2) OR RIGHT$(
CC$,4)<>RIGHT$(D$(I),4) THEN 930
920 PRINT "# ";I;". ";MSG$(I):Q=Q+1
930 NEXT I
940 IF Q<>0 THEN 970
950 PRINT "Sorry - no messages appear for this date":FOR I=1 TO 1500:NEXT I
960 GOTO 310
970 PRINT :PRINT "# ";:INPUT X
980 CLS:LOCATE 5,1:PRINT "# ";X;" ";D$(X);" ";MSG$(X)
990 PRINT :PRINT "Do you wish to change DATE ? (Y/N)"
1000 I$=INPUT$(1)
1010 IF I$="Y" OR I$="y" THEN 1040
1020 IF I$="N" OR I$="n" THEN 1100
1030 BEEP:GOTO 1000
1040 PRINT "New date ";:INPUT D$(X)
1050 IF LEN(D$(X))<>10 OR VAL(RIGHT$(D$(X),2))<VAL(RIGHT$(DATE$,2)) OR VAL(LEFT$(
D$(X),2))>12 OR VAL(MID$(D$(X),4,2))>31 THEN 1240
1060 PRINT "Correct ? (Y/N)":I$=INPUT$(1)
1070 IF I$="N" OR I$="n" THEN 1040
1080 IF I$="Y" OR I$="y" THEN 1100
1090 BEEP:GOTO 1060
1100 PRINT :PRINT "Do you wish to change the MESSAGE ? (Y/N)"
1110 I$=INPUT$(1)
1120 IF I$="Y" OR I$="y" THEN 1150
1130 IF I$="N" OR I$="n" THEN 1210
1140 BEEP:GOTO 1110
1150 PRINT "New message: ";:LINE INPUT MSG$(X)
1160 IF LEN(MSG$(X))>65 THEN 1260
1170 PRINT "Correct ? (Y/N)":I$=INPUT$(1)
1180 IF I$="N" OR I$="n" THEN 1150
1190 IF I$="Y" OR I$="y" THEN 1210
1200 BEEP:GOTO 1170
1210 GOSUB 2740
1220 GOSUB 1580
1230 GOTO 310
1240 BEEP:PRINT "(MM/DD/YYYY) or (MM-DD-YYYY) ";:GOTO 1040
1250 BEEP:PRINT "(MM/DD/YYYY) or (MM-DD-YYYY) ";:GOTO 840
1260 BEEP:PRINT "Message too long - cannot exceed 65 characters - try again"
1270 GOTO 1150
1280 BEEP:PRINT "(MM/DD/YYYY) or (MM-DD-YYYY) ";:GOTO 410
1290 BEEP:COLOR 0,7:PRINT " ERROR - MESSAGE TOO LONG - CANNOT EXCEED 65 CHARACT
ERS - TRY AGAIN ":COLOR 7,0
1300 GOTO 450
1310 BEEP:PRINT "(MM/DD/YYYY) or (MM-DD-YYYY) ";:GOTO 670

```



```

1320 REM *** DELETE ENTRIES ***
1330 CLS:LOCATE 5,1:PRINT "Please enter date of message to DELETE (MM/DD/YYYY)
or (MM-DD-YYYY)"
1340 INPUT DD$
1350 IF LEN(DD$)<>10 OR VAL(RIGHT$(DD$,2))<VAL(RIGHT$(DATE$,2)) OR VAL(LEFT$(DD$,
2))>12 OR VAL(MID$(DD$,4,2))>31 THEN 1560
1360 PRINT "The following messages are listed for ";DD$
1370 PRINT "(Please choose the number of the message to DELETE)"
1380 PRINT
1390 Q=0
1400 FOR I=1 TO N
1410 IF LEFT$(DD$,2)<>LEFT$(D$(I),2) OR MID$(DD$,4,2)<>MID$(D$(I),4,2) OR RIGHT$
(DD$,4)<>RIGHT$(D$(I),4) THEN 1430
1420 PRINT "# ";I;". ";MSG$(I):Q=Q+1
1430 NEXT I
1440 IF Q<>0 THEN 1470
1450 PRINT "Sorry - no messages appear for this date":FOR I=1 TO 1500:NEXT I
1460 GOTO 310
1470 PRINT :PRINT "# ";:INPUT X
1480 CLS:LOCATE 5,1:PRINT "# ";X;" ";D$(X);" ";MSG$(X)
1490 PRINT :PRINT "Are you sure you want to DELETE this message ? (Y/N)"
1500 I$=INPUT$(1)
1510 IF I$="Y" OR I$="y" THEN 1540
1520 IF I$="N" OR I$="n" THEN 310
1530 BEEP:GOTO 1500
1540 D$(X)="12/31/1999":GOSUB 2740
1550 N=N-1:GOSUB 1580:GOTO 310
1560 BEEP:PRINT "(MM/DD/YYYY) or (MM-DD-YYYY) ";:GOTO 1340
1570 REM *** WRITE FILE ***
1580 OPEN "O",1,"MESSAGE.FIL"
1590 PRINT #1, N
1600 FOR X=1 TO N
1610 PRINT #1,D$(X);",",MSG$(X)
1620 NEXT X
1630 CLOSE #1
1640 ON ERROR GOTO 0
1650 RETURN
1660 REM *** READ FILE ***
1670 OPEN "I",1,"MESSAGE.FIL"
1680 INPUT #1,N
1690 FOR X=1 TO N
1700 INPUT #1,D$(X),MSG$(X)
1710 NEXT X
1720 CLOSE 1
1730 RETURN
1740 REM *** ERROR TRAP ***
1750 IF ERR = 53 THEN 1770
1760 IF ERR <> 53 THEN PRINT "Error # ";ERR;" on line ";ERL:GOTO 1800
1770 CLS:LOCATE 10,15:PRINT "No file currently exists. Press any key to create a
file"
1780 I$=INKEY$:IF I$="" THEN 1780
1790 N=0:RESUME 360
1800 RESUME 290
1810 REM *** UPDATE FILE ***
1820 CLS:LOCATE 10,5:PRINT "This function will update all messages to the same d
ate, next year"
1830 LOCATE 15,5:PRINT "Press 'U' to UPDATE or 'R' to RETURN to menu (no update)
"
1840 I$=INPUT$(1)
1850 IF I$="R" OR I$="r" THEN 1800

```


SPEED RACER

by Bruce Hansen

The checkered flag drops as your pulse rises in this lively new arcade game. The road twists to the horizon on the 3-D panorama that sets the stage for the most exciting race the Sanyo has ever seen! Vie for time as you speed through the curves at incredible speeds. Step through the gears to stay ahead of the pack, but step lively since some will stop at nothing to see the end of the race, or the end of you! Four challenging raceways, complete with obstacles and colorful 3-D scenery, put your skills to the test in this Turbo™ type game.

128K Sanyo 550/555 (joystick recommended) ... \$34.95

DRIVE TIMER PLUS

by Paul McLeod

This trio of utilities is designed to protect and enhance the use of your disk drives and files. Since proper drive speed is so vital to file operation, this package features **TIMER**: a program that graphically displays any disk drive's motor speed and logs the results to disk. **ENCODE** protects your files from unauthorized access through the use of personal passwords. **FASTFILE** puts a multitude of disk commands (such as Move, Delete, Redate, Print, etc.) at your fingertips in simple, menu form. In one package **MichTron** brings you maintenance, protection, and convenience.

128K Sanyo 550/555 required \$24.95

TIME BANDIT

by Bill Dunlevy and Harry Lafnear

Action, adventure, and art unite in **TIME BANDIT**! Explore the realms of Time as you battle the Evil Guardians. Collect the Treasures of the Ages and unlock the doors to escape. But hurry Bandit, the Techno patrol is hot on your trail! Visit over **TWENTY** colorful adventure sites (in **ANY** order!) with over 15 levels in each. **THAT'S OVER 300 VARIATIONS!** **TWO** can even play at the same time—on their **OWN** windows! Two-player mode requires a joystick. This machine language epic will dazzle the fussiest graphic gawker and challenge the quickest arcade player. Beautiful scrolling landscapes, character animation, amazing sound, and **HUNDREDS OF SCREENS**—The conquest of Time and Space awaits you...

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TYPE RIGHT

by Ken Olson

Whether you want to end the fumbling of hunt-and-peck typing, or simply improve your speed and accuracy **TYPE RIGHT** is the answer. It teaches touch-typing in a way that ends computer anxiety and keyboard fears. Written in **MACHINE LANGUAGE** to be fast and accurate, **TYPE RIGHT** never misses a key. Color graphics and large letters make **TYPE RIGHT** perfect for any age! Learn at your own pace; repeat a previous drill, or forge ahead to sample paragraphs. **TYPE RIGHT** offers friendly, menu-driven use, and keeps track of everyone's personal progress.

128K Sanyo 550/555 required \$34.95

GRAFITI

by Jon Kring

Completely redesigned and compiled in Pascal, **GRAFITI** is faster and more powerful than ever! New features include rubber-banding graphics and even a zoom mode for magnified editing! With menu-help lines and a wide range of control keys, art is only a few keystrokes away. **GRAFITI** is perfect for business charts, graphs, and everything from line sketches to freestyle doodling. You can even put **GRAFITI** pictures into your own **BASIC** programs. **GRAFITI** will write program lines for you! The writing's on the wall: **GRAFITI** is the program for you!

256K Sanyo 550/555 required \$39.95

MUDPIES

by Philip McKenzie and Jeff Sorenson

Take an exciting trip to the big-top with this colorful arcade game. Slinging mudpies at frenzied clowns may seem like fun, but the clowns don't agree! They'll throw things back and try to catch you! Avoid danger, ward off the angry clowns, and grab a shake and fries at the same time in this unique game. Numerous challenge rounds, special prizes, 6 different screens, and special mud slinging rounds make this a great addition to anyone's game collection.

128K Sanyo 550/555 (joystick recommended) \$34.95

GRAPH PAC

by Tim Purves

Announcing a **COMPLETE** graphics interface for Lattice "C", DeSmet "C", Turbo Pascal, and machine language. Add color, graphics, and even sound to languages that previously lacked any Sanyo graphic routines! **GRAPH PAC** gives the programmer a powerful set of graphic commands, with line, curve, and polygon drawing, text print, sine and cosine, joystick read, sound, paint, full Get and Put stamp functions, and many more. **GRAPH PAC** opens avenues for everything from technical illustrations to video games! It even uses stamps made on the **PICASSO** drawing system! Free your imagination from the language barrier; let **GRAPH PAC** put you in the picture!

Requires Sanyo 550/555 and Lattice "C", DeSmet "C", Turbo Pascal, or machine language assembler \$49.95

MichTron

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```

1860 IF I$="U" OR I$="u" THEN 1880
1870 BEEP:GOTO 1840
1880 CLS:LOCATE 12,33:PRINT "... UPDATING ..."
1890 FOR I=1 TO N
1900 OD$=LEFT$(D$(I),8):NY$=RIGHT$(D$(I),2)
1910 NY=VAL(NY$)+1
1920 NY$=RIGHT$(STR$(NY),2)
1930 D$(I)=OD$+NY$
1940 NEXT I
1950 GOSUB 1580
1960 GOTO 180
1970 REM *** TODAY'S MESSAGES ***
1980 CM$=LEFT$(DATE$,2):CD$=MID$(DATE$,4,2):CY$=RIGHT$(DATE$,4):S$="/"
1990 SD$=CM$+S$+CD$+S$+CY$:GOSUB 2690
2000 Q=0
2010 CLS:LOCATE 5,1:COLOR 0,7:PRINT " ";Z$;" - ";SD$;" ":COLOR 7,0
2020 FOR I=1 TO N
2030 IF LEFT$(SD$,2)<>LEFT$(D$(I),2) OR MID$(SD$,4,2)<>MID$(D$(I),4,2) OR RIGHT$(SD$,4)<>RIGHT$(D$(I),4) THEN 2050
2040 PRINT:PRINT "*" ";:PRINT MSG$(I):Q=Q+1
2050 NEXT I
2060 IF Q=0 THEN GOSUB 2930
2070 GOSUB 2200
2080 GOSUB 2230
2090 PRINT
2100 A=VAL(RIGHT$(SD$,2))*365+B(VAL(LEFT$(SD$,2))+VAL(MID$(SD$,4,2)))
2110 XX=15:YY=0:Q=0
2120 FOR I=1 TO N
2130 IF A(I)<A OR A(I)>A+14 THEN 2170
2140 COLOR 0,7:PRINT " ";D$(I);" ";:COLOR 7,0:PRINT " ";MSG$(I)
2150 YY=YY+1:Q=Q+1
2160 IF YY=XX THEN GOSUB 2260
2170 NEXT I
2180 IF Q=0 THEN GOSUB 2960
2190 GOTO 2280
2200 LOCATE 22,25:COLOR 0,7:PRINT " Press any key to continue ":COLOR 7,0
2210 I$=INKEY$:IF I$="" THEN 2210
2220 RETURN
2230 CLS:LOCATE 5,1:COLOR 0,7:PRINT " MESSAGES FOR THE NEXT TWO WEEKS (14 DAYS)
":COLOR 7,0
2240 YY=0
2250 RETURN
2260 GOSUB 2200:GOSUB 2230
2270 RETURN
2280 LOCATE 22,25:COLOR 0,7:PRINT " Press any key to return to menu ":COLOR 7,0
2290 I$=INKEY$:IF I$="" THEN 2290
2300 GOTO 180
2310 REM *** SPECIFIED DAY'S MESSAGES ***
2320 CLS:LOCATE 10,1:PRINT "Please enter desired date (MM/DD/YYYY) or (MM-DD-YYYY)";
2330 INPUT SD$
2340 IF LEN(SD$)<>10 OR VAL(RIGHT$(SD$,2))<VAL(RIGHT$(DATE$,2)) OR VAL(LEFT$(SD$,2))>12 OR VAL(MID$(SD$,4,2))>31 THEN 2440
2350 GOSUB 2690
2360 CLS:LOCATE 5,1:COLOR 0,7:PRINT " ";Z$;" - ";SD$;" ":COLOR 7,0
2370 Q=0
2380 FOR I=1 TO N
2390 IF LEFT$(SD$,2)<>LEFT$(D$(I),2) OR MID$(SD$,4,2)<>MID$(D$(I),4,2) OR RIGHT$(SD$,4)<>RIGHT$(D$(I),4) THEN 2410

```


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For those with limited telecommunications experience our documentation includes a **Beginner's Primer**. This primer clearly and simply explains basic terms and can serve as the total manual needed for using INTELLICOM. **We even include a complete sample logon session for Compuserve that demonstrates how to use that service.** For the advanced communicator there is complete documentation on all emulations and protocols used. Actually, **Help Screens** are available anywhere within the program by pressing a single key and the manual is almost unnecessary. COMPARE!

REAL TERMINAL EMULATION

INTELLICOM offers you real terminal emulation. Not just dumb TTY. Select from a menu of terminals that include **Digital VT100 and VT52, ADDS Viewpoint and 25, ADM3 and ADM5, Televideo 910 and 925,** and of course a simple TTY. By the way, **our VT100 emulation is extensive and has been tested on the VAX editor EDT** and several other mainframe editors - and it works fine. A real **"break key"** is implemented on all emulations. We even allow you to look like the **Compuserve Executive Terminal**. Your PC can look like any of the above with INTELLICOM and operate with your business or university computer.

Which terminal(s) does our competition emulate?

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INTELLICOM will operate at speeds up to **4800 baud on the Sanyo 550/555, 9600 on IBM PCs or look-a-likes and 19200 on the DEC Rainbow.** Just because you are using a 300 or 1200 baud modem now, **INTELLICOM will not become outdated** as inexpensive 2400 baud modems become available. You can do direct wire transfers between computers at really fast rates and not be tied to your modem's limitations. Compare Speed!

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INTELLICOM even allows you to **define ten keys to be any string of character (up to 80 char long each).** Your ID number, password or any often sent string can easily be defined for each application you have. Of course you can **toggle your printer on and off with a single keystroke.** Yes, the **Hayes modem is supported as is the Anchor Mark XII.** Yes, **telephone directories** are supported (23 entries/directory and no limit to the number of directories on disk) and the program will continue to redial until the connection is made or you tell it to stop (persistence feature). Yes, INTELLICOM will work with any modem - if it is not an Anchor or Hayes all you will lose is the ability to have the computer dial the phone. **INTELLICOM will even recognize Michtron's DSDOS (2.11 version)** or standard MSDOS 2.11 and work properly with each. Of course the program is **menu driven** but we also allow you to use single keystrokes for the most popular features - no need to memorize cryptic commands. **Reasonable update policy** - previous purchasers may update to the most current version by returning their original disk and a check for \$15.00 Compare again!

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```

2400 PRINT :PRINT "***";PRINT " ";:PRINT MSG$(I):Q=Q+1
2410 NEXT I
2420 IF Q=0 THEN GOSUB 2930
2430 GOTO 2450
2440 BEEP:PRINT "(MM/DD/YYYY) or (MM-DD-YYYY)";:GOTO 2330
2450 LOCATE 22,25:COLOR 0,7:PRINT " Press any key to return to menu ":COLOR 7,0
2460 I$=INKEY$:IF I$="" THEN 2460
2470 GOTO 180
2480 REM *** LISTING ***
2490 CLS
2500 XX=20
2510 FOR I=1 TO N
2520 COLOR 0,7:PRINT " ";D$(I);" ";:COLOR 7,0:PRINT " ";:PRINT MSG$(I)
2530 IF I=XX THEN GOSUB 2650
2540 NEXT I
2550 GOSUB 2650
2560 CLS:LOCATE 10,30:PRINT "Hard copy ? (Y/N)"
2570 I$=INPUT$(1)
2580 IF I$="N" OR I$="n" THEN 2640
2590 IF I$="Y" OR I$="y" THEN 2610
2600 BEEP:GOTO 2570
2610 LOCATE 15,30:PRINT "... PRINTING ..."
2620 FOR I=1 TO N:LPRINT D$(I);" ";MSG$(I):NEXT I
2630 LPRINT CHR$(12);
2640 GOTO 180
2650 LOCATE 22,26:COLOR 0,7:PRINT " Press any key to continue ":COLOR 7,0
2660 I$=INKEY$:IF I$="" THEN 2660
2670 XX=XX+20:CLS
2680 RETURN
2690 REM *** DAY TO DATE ***
2700 C=VAL(MID$(SD$,7,2)):Y=VAL(RIGHT$(SD$,2)):M=VAL(LEFT$(SD$,2)):D=VAL(MID$(SD$,4,2)):T=(1=1)
2710 Z=INT(2.6*(M-2+T*12*(M<3))-.199)+D+Y-T*(M<3)+INT((Y-T*(M<3))/4)+INT(C/4)-2*C
2720 Z$=MID$("SUNMONTUEWEDTHUFRISAT",1+3*(Z-7*INT(Z/7)),3)
2730 RETURN
2740 REM *** SORT ***
2750 CLS:LOCATE 10,32:PRINT "... SORTING ..."
2760 FOR I=1 TO 12
2770 READ B(I)
2780 NEXT I
2790 RESTORE 2920
2800 FOR I=1 TO N
2810 A(I)=VAL(RIGHT$(D$(I),2))*365+B(VAL(LEFT$(D$(I),2)))+VAL(MID$(D$(I),4,2))
2820 NEXT I
2830 FOR K=1 TO N-1
2840 FOR J=1 TO N-K
2850 IF A(J)<=A(J+1) THEN 2890
2860 T=A(J):T$=D$(J):TM$=MSG$(J)
2870 A(J)=A(J+1):D$(J)=D$(J+1):MSG$(J)=MSG$(J+1)
2880 A(J+1)=T:D$(J+1)=T$:MSG$(J+1)=TM$
2890 NEXT J
2900 NEXT K
2910 RETURN
2920 DATA 0,31,59,90,120,151,181,212,243,273,304,334
2930 REM *** CONDOLENCES ***
2940 PRINT :PRINT "Sorry - no messages today"
2950 RETURN
2960 PRINT:PRINT "Sorry - no messages for this 2 week period"
2970 RETURN

```



This month we look at one way
that computers organize data in memory

The Power Of Numeric Arrays

By Fred Blechman

Soft Sector
Contributing Editor

(Fred Blechman, an acknowledged authority on home computers, has written several articles and books related to microcomputers. He is self-taught in electronics and computer BASIC programming and specializes in writing for beginners. This article is based on material from a forthcoming book by the author, Sanyo MBC-550/555 Beginner/Intermediate Guide, soon to be published by Holt, Rinehart and Winston, a division of CBS College Publishing.)

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Back in my own "BASIC Training" days I kept running into "arrays." Unfortunately, the first BASIC book I used was weak in that area, and arrays remained a mystery to me for a long time. Somehow, I knew they must be very powerful since I saw them used in many programs, but they confused me.

Finally, one day the concept of arrays sunk in, and I've used them very effectively ever since. Actually, I think that if you fully understand the way READ/DATA and arrays operate, you can write extremely powerful programs.

Single-Dimension Arrays

If you've ever been in a bank vault with a wall full of safe deposit boxes, you've seen an "array" of boxes. This is also true for post office boxes. It's even true for the stacks of shoe boxes in a shoe store.

Don't get frightened by the name "array." It merely means an organized arrangement of storage locations. Computers excel at keeping things organized in memory, and arrays do just that.

A "single-dimension" numerical array can be designated with any variable name, with up to 16 characters recognized, starting with a letter. An "A-array" is shown in Figure 1. There

are eight boxes in this array, identified as A(0) through A(7). The parentheses identify that this is an array, and the 'A' makes this the A-array. The designation A(4), for example, is frequently referred to as "A-sub 4" by computer people.

All numerical array locations are initialized by the computer with zeros, and values can then be assigned to any location in any order. Also, numerical arrays can be designated as integer, single-precision or double-precision, with single-precision the default type.

The number in each box is the value stored in that array location. For example, A(2) is 25.2, and A(4) is 32.8 in Figure 1. These can be treated the same as any numeric variable, and can be used in calculations. For example, A(2)+A(4) is equal to 58.

You can also reassign the value in an array as you would any variable. If you type A(5)=72.8 and press ENTER, you have assigned the value of 72.8 to array location A(5).

DIMension Statement

Sanyo BASIC allows you to have up to 11 array locations (zero to 10) without clearing any additional memory space. All of these array locations need not be used, but as soon as you specify a 12th location, such as A(11), a DIM

statement — to DIMension needed memory space — must be used. It's a good habit to start any program that will use arrays with a DIM statement. If you exceed the size allowed by the DIM statement (or 11 locations without the DIM statement) the computer interrupts program operation with a "Subscript out of range" error.

A typical DIM statement might be:

```
10 DIM A(100),BAKER(50),C(20)
```

This would allocate memory space for three arrays — 101 locations for the A-array, 51 locations for the BAKER-array, and 21 locations for the C-array. (Note that zero is a valid location for all arrays.)

The OPTION BASE Option

Each array has a zero location available, even though most programmers don't use it. You can eliminate it (thus saving a little memory and some confusion) with the OPTION BASE 1 statement. This eliminates the zero location in all arrays in that program, and it must be used before any DIM statement. This does not extend the undimensioned array to an additional location — it just eliminates the zero locations. Therefore, any attempt to use a zero array location after using OPTION BASE 1 will result in a "Subscript out of range" error.

Array Assignments

You can assign values to array locations with regular variable assignments (such as $A(7)=80.7$) or by using READ/DATA or INPUT statements in defined loops. Listings 1 and 2 are examples, with a typical RUN of Listing 1 shown in Figure 2.

The programs are almost identical except for Line 110 (and the DATA statements.) In both cases, OPTION BASE 1 has been used to eliminate the zero array locations, and the DIM statement sets up arrays A and B with 20 locations each. The values are put into the array either with a READ/DATA loop or with INPUT statements.

ERASing A DIMension

If memory is critical and you have used-up array space that is no longer needed, you can recover this memory with the ERASE statement, followed by the name or names of the array. For example, in the program of Listing 1, my 128K Sanyo 550 showed memory remaining (using ?FRE) of 41,432. Then I typed ERASE A,B and pressed ENTER. Now ?FRE showed 41,616 — 184 more bytes of usable memory than before. Obviously, more and larger arrays would require more reserved memory that could be recovered with ERASE. Of course, when you use ERASE, you literally ERASE all values in the specified arrays.

Two-Dimension Arrays

Just as a single-dimension array consists of a row of "boxes," a two-dimension array has both horizontal rows and vertical columns of individual locations, as shown in Figure 3. The DIMension statement must now specify both the number of rows and columns in this array, with rows first.

For example, DIM R(20,5) is a two-dimensional R-array with 21 horizontal rows and six vertical columns (remember the zeros?), for a total of 126 locations. Array location R(4,3) would be row four down and column three across. Each array location is initialized on RUN with a value of zero, and values can then be assigned in any sequence. The values shown here are random integer values.

Array Manipulation

The values in the array can be retrieved, changed, relocated, or processed to your heart's desire. The array merely provides an arrangement of variables in an organized fashion so you can visualize their relationship.

You can perform all allowed mathematical functions on any "elements" of an array, in any order you desire. Listing 3 fills a five-row by 10-column array with random integers, then PRINTs out the array, then PRINTs

totals of each row and column, and finally PRINTs a grand total of all the numbers in the array. Figure 4 shows the result of one RUN.

The programming here illustrates nested loops and cumulative totals, but really has nothing new. You should be able to follow it by now with a little thought. Notice the "modular" construction; that is, different functions are headed with a REMark statement and begin with line numbers that are multiples of 100. There is no requirement that a program be designed this way, but it does make it easier to follow.

Incidentally, the program was not as neat as this when written originally. I added the REMarks and used the RENUM command to RENUMber the entire program into modules, starting at the top and doing a section at a time. For example, RENUM 100,30,10 would begin with new line number 100, starting at existing line number 30, and RENUMbering all following lines with increments of 10 between them. In addition, any GOTOs, GOSUBs and other program line references are also corrected in the process to refer to the new line numbers. Very handy, indeed!

Multidimensional Arrays

Why stop at two dimensions? You can visualize three dimensions by adding "depth" or "levels" to the rows and columns. Look at Figure 5 for an example of a three-dimension array, in this case the familiar calendar. Here the rows are weeks, the columns are days of the week (Sunday through Saturday), and the levels are months. More on this shortly.

Beyond three DIMensions you can work up your own analogies. For example, consider a room with 10 file cabinets, each cabinet having four drawers, each drawer with 100 file folders, each folder with 25 sheets of paper, and each sheet with 50 lines of text. You could now set up a DIM A(50,25,100,4,10) to specify a line of text on a particular sheet in a particular folder in a particular drawer in a particular file cabinet! If you had

15 rooms like this, and 30 identical buildings, the DIMension statement would be:

```
DIM A(50,25,100,4,10,15,30)
```

Following through on that, A(1,2,3,4,5,6,7) would be the first line of text on the second sheet in the third folder in the fourth drawer in the fifth cabinet in the sixth room of the seventh building. Of course, you would need a huge amount of memory for this size array!

Three-Dimension Calendar

After that exercise, this will be easy. Just look at Figure 5, which is almost self-explanatory. Array C(6,7,12) has six rows, seven columns and 12 levels. Each level is a two-dimension array representing a month of the 1984 year. C(3,2,1) is the 16th of January, C(6,1,9) is the 30th of September, and C(6,4,10) is blank. There are a total of 504 array locations (6 times 7 times 12).

Getting the day numbers into this three-dimension array is accomplished with lines 40 through 80 and 100 through 210 of Listing 4. After the entire array is "loaded" with actual 1984

dates, the entire year's calendar is PRINTed on the screen by program lines 1000 to 1100.

The DATA for the 1984 year is held in lines 510 and 520 in a very simple fashion, two numbers at a time. The first number represents the column location of the first day of that month, and the second number is the highest numbered day in that month. Look at the first two numbers in Line 510 — 1 and 31. This means the first day of the month falls in the first column (Sunday), and there are 31 days in the month (January). Obviously, when 1985 rolls around, you only have to change the numbers in lines 510 and 520 (and the "1984" in Line 1010) to have a 1985 calendar.

The programming here, while full of nested loops, contains nothing that we haven't previously discussed except for the multi-dimensioned array. Line 1070 may look odd. Its purpose is to eliminate the zeros from the array and replace them with blank spaces. Note that the V\$ comparison contains a blank space before the zero, since STR\$ of a number carries the leading blank space.

To PRINT this calendar on your

printer, just change all PRINT statements in lines 1000 to 1100 to LPRINT. The result is shown in Figure 6.

Maximum Array Size

Array DIMension is limited by the available memory, which is affected by the size of the program in memory and the maximum memory available. In my Sanyo 550 with 128K and Sanyo BASIC, I have found the largest number of array DIMensions to be 11, if all DIMensions are limited to one:

```
DIM A(1,1,1,1,1,1,1,1,1,1,1)
```

This is not very practical, however, and you will seldom see DIM statements exceeding three DIMensions.

String Arrays

Just as you can have numerical arrays to contain numbers, so can you have "string arrays" to contain strings. They are identified with the variable name followed by a dollar sign (\$). For example, ABLE\$(3,4,5) is a three-row, four-column, five-level string array you would refer to as the "ABLE string array."

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String arrays can be manipulated like numerical arrays, but no calculations can be performed on string arrays. They are frequently used in sorting and searching routines.

Listing 5 shows a program that keeps name, age, gender, and favorite pastime in a two-dimension array. The first column of each row contains the name, and the other columns in that row contain the information associated with

each name. You can retrieve all names with the same interest, or within an age group, of the same or different sex. This is a mini "computer dating program," using DATA statements to load the information into the array. Figure 7 is a sample RUN, showing all the "members."

The REMARK statements, screen information and screen menus make this program simple to use. New names are

"dovetailed" in alphabetical order by line number into the existing list of DATA statements.

No special explanation of this program is required. If you've read and understood this far, you're not a beginner anymore!

BASIC TRAINING

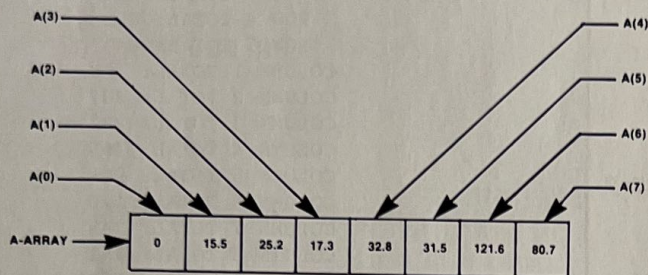


Figure 1: Array locations.

Listing 1: Array assignments with DATA

```
10 OPTION BASE 1
20 DIM A(20), B(20)
100 FOR X=1 TO 20
110 READ A(X), B(X)
120 NEXT
130 FOR X=1 TO 20
140 PRINT A(X); " "; B(X),
150 NEXT
1000 DATA 1,10,2,20,3,30,4,40,5,50,6,60,7,70,8,80,9,90
1010 DATA 10,100,11,110,12,120,13,130,14,140,15,150
1020 DATA 16,160,17,170,18,180,19,190,20,200
```

Figure 2: RUN of Listing 1.

Ready

>run

1	10	2	20	3	30	4	40	5	50
6	60	7	70	8	80	9	90	10	100
11	110	12	120	13	130	14	140	15	150
16	160	17	170	18	180	19	190	20	200

Ready

>

Listing 2: Array assignment with INPUT

```
10 OPTION BASE 1
20 DIM A(20), B(20)
100 FOR X=1 TO 20
110 PRINT "Enter values for A(X) and B(X) for x="; X; : INPUT A(X), B(X)
120 NEXT
130 FOR X=1 TO 20
140 PRINT A(X); " "; B(X),
150 NEXT
```

ROW #	COLUMN #					
	0	1	2	3	4	5
0	73	67	42	22	46	11
1	39	96	54	36	1	91
2	69	1	60	75	28	84
3	16	41	92	92	91	4
4	47	53	34	8	4	22
5	19	19	98	80	44	30
6	90	30	32	58	67	2
7	32	45	40	52	17	58
8	43	58	86	90	39	26
9	62	57	14	85	93	3
10	77	89	54	93	65	19
11	42	20	40	80	81	2
12	87	0	19	80	16	34
13	30	23	64	63	12	21
14	92	91	89	92	86	48
15	9	79	57	87	45	48
16	40	90	96	91	14	83
17	53	43	99	95	52	25
18	46	16	96	34	28	14
19	22	50	44	80	89	77
20	17	32	86	45	95	11

Figure 3: Two-dimension array

Listing 3: Array manipulation.

```

10 CLS
20 OPTION BASE 1: DIM Z(5,10)
100 REM * FILL ARRAY WITH INTEGERS *
110 FOR Y=1 TO 5
120 FOR X=1 TO 10
130 Z(Y,X)=INT(RND(1)*100)
140 NEXT X,Y
200 REM * PRINT NUMBERS IN ARRAY *
210 FOR Y=1 TO 5
220 FOR X=1 TO 10
230 PRINT TAB(X*5) Z(Y,X);
240 NEXT X:PRINT:NEXT Y
300 REM * PRINT ROW TOTALS *
310 FOR Y=1 TO 5
320 FOR X=1 TO 10
330 RT=RT+Z(Y,X)
340 NEXT X
350 PRINT TAB(20) "ROW";Y;"TOTAL:";RT:GT=GT+RT:RT=0
360 NEXT Y
400 REM * PRINT COLUMN TOTALS *
410 FOR X=1 TO 10
420 FOR Y=1 TO 5
430 CT=CT+Z(Y,X)
440 NEXT Y
450 PRINT TAB(18) "COLUMN";X;"TOTAL:"CT:CT=0
460 NEXT X
500 REM * PRINT GRAND TOTAL *
510 PRINT TAB(15) "GRAND TOTAL OF ALL NUMBERS:";GT

```

Figure 4: RUN of Listing 3.

33	51	68	92	19	68	91	96	76	41
94	99	28	87	63	31	23	49	8	45
34	93	66	23	60	12	98	68	25	23
89	11	76	67	50	6	88	13	18	33
58	53	53	96	11	3	42	25	94	6
ROW 1 TOTAL: 635									
ROW 2 TOTAL: 527									
ROW 3 TOTAL: 502									
ROW 4 TOTAL: 451									
ROW 5 TOTAL: 441									
COLUMN 1 TOTAL: 308									
COLUMN 2 TOTAL: 307									
COLUMN 3 TOTAL: 291									
COLUMN 4 TOTAL: 365									
COLUMN 5 TOTAL: 203									
COLUMN 6 TOTAL: 120									
COLUMN 7 TOTAL: 342									
COLUMN 8 TOTAL: 251									
COLUMN 9 TOTAL: 221									
COLUMN 10 TOTAL: 148									
GRAND TOTAL OF ALL NUMBERS: 2556									

Ready
>

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Listing 4: Calendar Program.

```

10 REM * CALENDAR PROGRAM USING MULTIDIMENSIONAL ARRAY *
20 REM * (C) COPYRIGHT FRED BLECHMAN 1984 *
30 OPTION BASE 1
40 DIM C(6,7,12)
50 FOR M=1 TO 12
60 READ S,N:PRINT"Loading month";M
70 GOSUB 1000
80 NEXT M:GOTO 1000
1000 REM * MONTHLY CALENDAR ARRAY SUBROUTINE *
110 D=1
120 FOR C=S TO 7
130 C(1,C,M)=D
140 IF D=8 THEN 160 ELSE D=D+1
150 NEXT C
160 FOR ROW=2 TO 6
170 FOR COL=1 TO 7
180 C(ROW,COL,M)=D
190 IF D=N THEN RETURN ELSE D=D+1
200 NEXT COL:NEXT ROW
210 RETURN
5000 REM * DATA FOR DAYS EACH MONTH *
510 DATA 1,31,4,29,5,31,1,30,3,31,6,30
520 DATA 1,31,4,31,7,30,2,31,5,30,7,31
530 REM * MONTH NAMES *
540 DATA JANUARY,FEBRUARY,MARCH,APRIL,MAY,JUNE,JULY
550 DATA AUGUST,SEPTEMBER,OCTOBER,NOVEMBER,DECEMBER
10000 REM * PRINTING CALENDAR *
1010 T=1: PRINT TAB(18)"1984":PRINT
1020 FOR M=1 TO 12
1030 READ M$
1040 PRINT TAB((40-LEN(M$))/2);M$
1050 FOR R=1 TO 6
1060 FOR C=1 TO 7
1070 V$=STR$(C(R,C,M)):IF V$=" 0" THEN V$=" "
1080 PRINT TAB(T) V$;
1090 T=T+6:IF T>40 THEN T=1
1100 NEXT C:NEXT R:PRINT :NEXT M:PRINT :NEXT

```

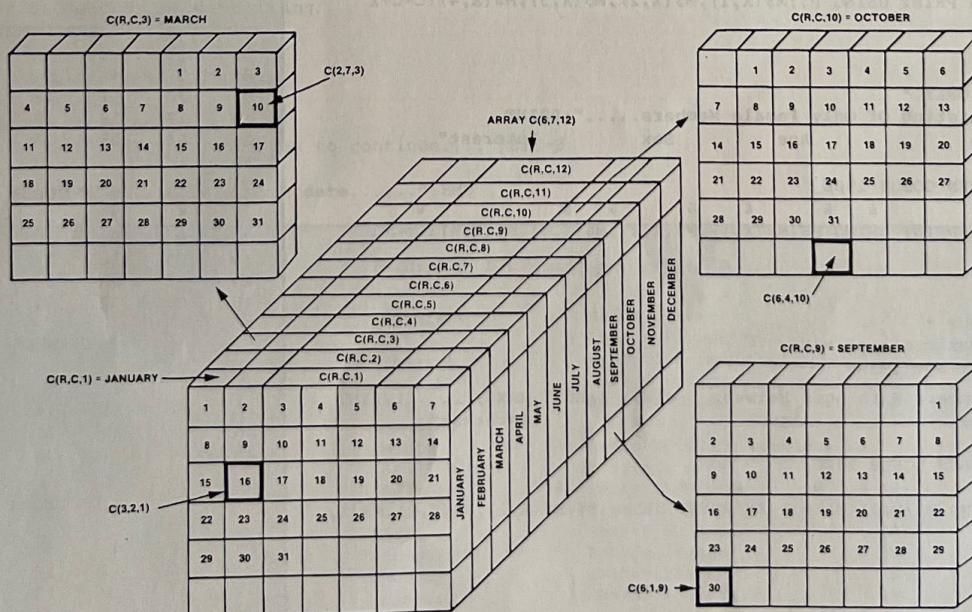


Figure 5: Three-dimension calendar array — 1984

Listing 5: Matchmaker Program

```

10 REM * SANYO MATCHMAKER *
20 REM * (C) Copyright Fred Blechman 1984 *
30 CLS:OPTION BASE 1
40 REM * Change 100 in next line to larger number if more than 100 names *
50 DIM M$(100,4)
60 LOCATE 10,20:PRINT"HOLD EVERYTHING! I'm getting my act together....."
200 REM * READ DATA INTO TWO-DIMENSION ARRAY *
210 FOR X=1 TO 100
220 READ M$(X,1),M$(X,2),M$(X,3),M$(X,4)
230 IF M$(X,1)="ZZZ" THEN GOTO 300
240 NEXT X
300 REM * INSTRUCTIONS *
310 CLS: PRINT: PRINT TAB(30)"your Sanyo Matchmaker"
320 PRINT:PRINT"      Just get the names of everyone you know (and everyone THEY
know) who's"
330 PRINT"single. Have them fill out a simple card with their name, age, sex and
primary"
340 PRINT"interest (specific categories, such as Boating, Swimming, Dancing, Ten
nis,"
350 PRINT"Theatre, Music and so on.)"
360 PRINT:PRINT"      Then enter this information in DATA statements as shown sta
rting at line"
370 PRINT"1000 of this program. The more names and categories of interest, the m
ore"
380 PRINT"valuable this program will be.....Have Fun!"
390 PRINT:INPUT"When ready to continue, press the down-arrow ENTER key.....";A
500 REM * MENU *
510 CLS:PRINT:PRINT"Select one of the following choices, by number....."
520 PRINT TAB(20)"(1) List all members of the group."
530 PRINT TAB(20)"(2) List only male members of the group."
540 PRINT TAB(20)"(3) List only female members of the group."
550 PRINT TAB(20)"(4) Select an age group."
560 PRINT TAB(20)"(5) Select a category of interest for a 'match.'"
570 PRINT TAB(20)"(6) End this program."
580 PRINT:INPUT"Select a number.....(1-6 only)";A
590 IF A<1 OR A>6 THEN GOTO 580
600 CLS:ON A GOTO 700,800,900,1000,1200,6000
700 REM * LIST ALL *
710 CLS:PRINT TAB(20)"Listing All Members.....":PRINT
720 PRINT "      Name      Age      Sex      Interest"
730 C=0:FOR X=1 TO 100
740 IF M$(X,1)="ZZZ" THEN GOSUB 1500
750 P$="&      &      &      &      &"
760 PRINT USING P$;M$(X,1),M$(X,2),M$(X,3),M$(X,4):C=C+1
770 GOSUB 5000
780 NEXT X
790 GOTO 1500
800 REM * LIST MALES ONLY *
810 CLS:PRINT TAB(20)"Listing Of Only Male Members.....":PRINT
820 PRINT "      Name      Age      Sex      Interest"
830 C=0:FOR X=1 TO 100
840 IF M$(X,1)="ZZZ" THEN GOSUB 1500
850 P$="&      &      &      &      &"
860 IF M$(X,3)="m" THEN PRINT USING P$;M$(X,1),M$(X,2),M$(X,3),M$(X,4):C=C+1
870 GOSUB 5000
880 NEXT X
890 GOTO 1500
900 REM * LIST FEMALES ONLY *
910 CLS:PRINT TAB(20)"Listing Of Only Female Members.....":PRINT
920 PRINT "      Name      Age      Sex      Interest"
930 C=0:FOR X=1 TO 100
940 IF M$(X,1)="ZZZ" THEN GOSUB 1500
950 P$="&      &      &      &      &"
960 IF M$(X,3)="f" THEN PRINT USING P$;M$(X,1),M$(X,2),M$(X,3),M$(X,4):C=C+1
970 GOSUB 5000
980 NEXT X
990 GOTO 1500
1000 REM * LIST AGE GROUP *
1010 CLS: PRINT:INPUT"Maximum age";MAX$
1020 PRINT:INPUT"Minimum age";MIN$
1030 CLS:PRINT"Group Members With Ages Between ";MIN$;" and ";MAX$;"....":PRINT
1040 PRINT "      Name      Age      Sex      Interest"
1050 C=0:FOR X=1 TO 100
1060 IF M$(X,1)="ZZZ" THEN GOSUB 1500
1070 P$="&      &      &      &      &"
1080 IF M$(X,2)=>MIN$ AND M$(X,2)<MAX$ THEN PRINT USING P$;M$(X,1),M$(X,2),M$(X,
3),M$(X,4):C=C+1
1090 GOSUB 5000
1100 NEXT X
1110 GOTO 1500
1200 REM * SELECT INTEREST *

```

1984						
JANUARY						
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				
FEBRUARY						
		1	2	3	4	
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			
MARCH						
			1	2	3	
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
APRIL						
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					
MAY						
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		
JUNE						
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
JULY						
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				
AUGUST						
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	
SEPTEMBER						
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						
OCTOBER						
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			
NOVEMBER						
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	
DECEMBER						
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Figure 6: 1984 Calendar.


```

1210 CLS: PRINT: INPUT "Select Sex: m=male, f=female"; S$
1220 PRINT: PRINT "Select INTEREST from allowed list....."
1230 PRINT TAB(10) "(1) Art"
1240 PRINT TAB(10) "(2) Boating"
1250 PRINT TAB(10) "(3) Computing"
1260 PRINT TAB(10) "(4) Dancing"
1270 PRINT TAB(10) "(5) Music"
1280 PRINT TAB(10) "(6) Swimming"
1290 PRINT TAB(10) "(7) Tennis"
1300 PRINT TAB(10) "(8) Theatre"
1310 INPUT "Select number of Interest....."; N
1320 IF N=1 THEN I$="Art"
1330 IF N=2 THEN I$="Boating"
1340 IF N=3 THEN I$="Computing"
1350 IF N=4 THEN I$="Dancing"
1360 IF N=5 THEN I$="Music"
1370 IF N=6 THEN I$="Swimming"
1380 IF N=7 THEN I$="Tennis"
1390 IF N=8 THEN I$="Theatre"
1400 CLS: IF S$="m" THEN PRINT "Male Members With Interest In "; I$: PRINT
1410 IF S$="f" THEN PRINT "Female Members With Interest In "; I$: PRINT
1420 PRINT "      Name      Age      Sex      Interest"
1430 C=0: FOR X=1 TO 100
1440 IF M$(X,1)="ZZZ" THEN GOSUB 1500
1450 P$="&      &      &      &      &      &"
1460 IF M$(X,3)=S$ AND M$(X,4)=I$ THEN PRINT USING P$; M$(X,1), M$(X,2), M$(X,3), M$(X,4): C=C+1
1470 GOSUB 5000
1480 NEXT X
1500 PRINT: INPUT "Press ENTER to return to MENU....."; Z
1510 GOTO 500
2000 REM * DATA NAME, AGE, SEX, INTEREST *
2010 DATA Barbara Scott, 38, f, Art
2020 DATA Sam Cramer, 42, m, Theatre
2030 DATA Harriet Davison, 34, f, Tennis
2040 DATA Marvin Englehardt, 44, m, Art
2050 DATA Harris Barnes, 42, m, Dancing
2060 DATA Fred Fredrickson, 37, m, Music
2070 DATA Billie Gordon, 33, f, Dancing
2080 DATA Henry Harris, 38, m, Swimming
2090 DATA Adrienne Jacoby, 43, f, Boating
2100 DATA William R. Jonas III, 45, m, Art
2110 DATA Millicent Kennedy, 39, f, Computing
2120 DATA Tom Loring, 37, m, Tennis
2130 DATA Lillian McCarthy, 27, f, Dancing
2140 DATA Harrison Nesbitt, 44, m, Music
2150 DATA Jacqueline Norris, 39, f, Tennis
2160 DATA Sandy Oliver, 37, m, Boating
2170 DATA Dennis Penworthy, 38, m, Boating
2180 DATA Nancy Osterman, 48, f, Dancing
2190 DATA George Quincy, 34, m, Art
2200 DATA John Raymond, 39, m, Music
2210 DATA Virginia Ross, 42, f, Swimming
2220 DATA Terry Stanford, 39, f, Computing
2230 DATA Steven Stodwick, 40, m, Art
2240 DATA Robert S. Squires, 38, m, Computing
2250 DATA Bobbie Thomas, 39, f, Boating
2260 DATA Esther VanHoven, 45, f, Music
2270 DATA Hannah Yablonsky, 47, f, Theatre
4000 DATA ZZZ, XX, X, XXXXXX
5000 REM * Paging Subroutine *
5010 IF C=20 THEN PRINT: INPUT "Press ENTER to continue...."; Z: C=0
5020 RETURN
6000 LOCATE 12, 20: PRINT ".....Have a nice date.....": END

```

Figure 7: All members in DATA

Name	Age	Sex	Interest
Barbara Scott	38	f	Art
Sam Cramer	42	m	Theatre
Harriet Davison	34	f	Tennis
Marvin Englehardt	44	m	Art
Harris Barnes	42	m	Dancing
Fred Fredrickson	37	m	Music
Billie Gordon	33	f	Dancing
Henry Harris	38	m	Swimming
Adrienne Jacoby	43	f	Boating
William R. Jonas III	45	m	Art
Millicent Kennedy	39	f	Computing
Tom Loring	37	m	Tennis
Lillian McCarthy	27	f	Dancing
Harrison Nesbitt	44	m	Music
Jacqueline Norris	39	f	Tennis
Sandy Oliver	37	m	Boating
Dennis Penworthy	38	m	Boating
Nancy Osterman	48	f	Dancing
George Quincy	34	m	Art
John Raymond	39	m	Music
Press ENTER to continue....?			
Virginia Ross	42	f	Swimming
Terry Stanford	39	f	Computing
Steven Stodwick	40	m	Art
Robert S. Squires	38	m	Computing
Bobbie Thomas	39	f	Boating
Esther VanHoven	45	f	Music
Hannah Yablonsky	47	f	Theatre
Press ENTER to return to MENU.....?			



CHARLOTTE & BRIAN STONE
Soft Sector Contributing Editors

Q. How can I have CalcStar on the disk in drive A and the files on drive B? Also, is there an additional reference book for CalcStar?

Rev. Charles Truax
Marietta, GA

A. You can copy all of the *CalcStar* files onto one disk with the operating system for use in drive A (double-sided disk drives only). Then use the *CalcStar* “;L” command as follows when asked for the name of the file to load. B:filename will load the file from the B drive. You would do the same thing to save to the B drive: “;S” then B:filename will save to the B drive. This way you can have a program disk and a separate data disk.

The manual that comes with the computer is the only one that I have ever seen about *CalcStar*. It is very good and you should follow the sample exercises to gain a working knowledge of the program.

Q. For several months now I have been having difficulty installing my CAL-ABCO Legend 880 printer for use with WordStar. How do I use super/subscript? Can I print any of the ASCII characters below 32 and above 127 with WordStar? Also, do you know who manufactures this printer? I can't find them. I want some technical information

Edward R. Bowers
Rockford, IL

to be able to convert the screen dump utility that Sanyo furnishes.

A. The CAL-ABCO Legend printers were originally designed to emulate the Epson printer line. To use your printer with *WordStar*, try using the Epson choice from the installation program menu. The original CAL-ABCO printer used the same mechanism as the Mannesmann Tally Spirit MT-80. The address of CAL-ABCO is: 6041 Variel Ave., Woodland Hills, CA 91367.

To use super/subscript, the codes are as follows from the copies of the pages of your printer manual.

Superscript On	1Bh	5Dh	0h
Subscript On	1Bh	5Dh	1h
Super/Sub Off	1Bh	48h	

There is no way that I know of to print ASCII characters lower than 32 or above 127 with *WordStar*. It was designed for word processing, not graphics. I do not know of a supplemental package that will allow you to do this.

You should be able to use the Sanyo-furnished screen dump that works with the Epson printer on the Legend 880.

Q. *I have an Epson RX 80/FT+ printer and have been able to get almost everything I want to work except continuous underlining, “.CW” character width and “.LH” line height. Can you help?*

Brent L. Helms
Miami, FL

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A. Dot matrix printers do not honor the character width or line height dot commands. These commands are for use by daisy wheel printers which are able to divide each character space into 120 increments and vertical lines into 48 increments. This is something you will not be able to take advantage of with your Epson printer.

Regarding continuous underlining with the Epson, I do not have a current manual for the Epson printers and what I have does not show anything other than using CHR\$(95) or "5FH" as the underline character. You could try using one of the user patch areas to install your own code, but I don't know of a way to change the "^PS" function as *WordStar* is now. Possibly one of our readers has solved this problem and would share it with all of us.

Q. Do you know how I can find detailed information on the software as well as the hardware for the Sanyo MBC-550 series computers? I am interested in the development of new applications as well as converting existing IBM code.

Major James M. Cloninger
HQ U.S. Army Europe

A. Sanyo publishes the following manuals: Sanyo BASIC, GW-BASIC, *WordStar*, *SpellStar*, *ReportStar*, *MailMerge*, MS-DOS 1.1 and 2.X, MBC-550/555 Parts List with complete schematics and the MBC-550 Series Service Manual with technical information not available elsewhere.

These manuals start at about \$10 each for the service manuals and go to about \$50 for the software manuals. These and other books published by Sybex, Brady and Prentice-Hall are an excellent source of knowledge for the Sanyo and its software.

Q. How can I print more than one copy of a document with *WordStar* without using *MailMerge*? Is it possible to print all even numbered pages, then turn the paper over (continuous form) to print the odd numbers on the back?

N.A. Kelly
Denman Island, B. C.

A. The only way to get multiple copies with *WordStar* is to use the *MailMerge* option. *WordStar* cannot be made to print more than one copy of a file.

Unfortunately there is no way to print alternate pages (i.e., 1, 3, 5) and then go back and print the even number pages with *WordStar*. Most people do not print on the back of the page. If you wanted to go to the trouble, you could save each page as a separate document and chain odd number pages together with *MailMerge*, then do the same with the even numbers. The really big problem with this would be if the file was edited and the page became longer than your format, you would have to start over (not a pleasant thought).

Q. I use EasyWriter I and am having trouble with the ".NUMBER=X,XX,XX" command for page numbering. The ".PAGESIZE" and ".NEWPAGE" commands work just fine. I want to be able to number my pages, but I just can't get it to work.

G. Gardinal
Cocoa Beach, FL

A. I think that the solution to your problem might be as follows if you're doing *exactly* what you say in your letter.

On Page 8-14 and Page 12-7 of the *EasyWriter I* manual,

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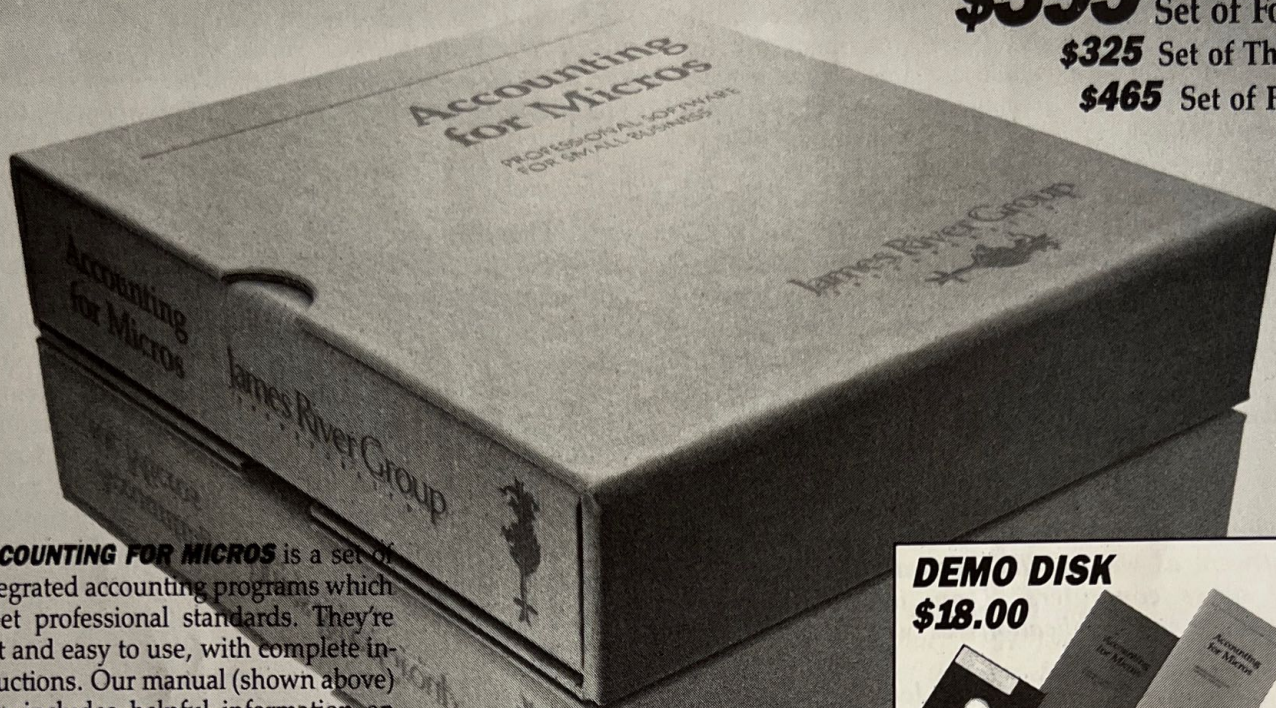
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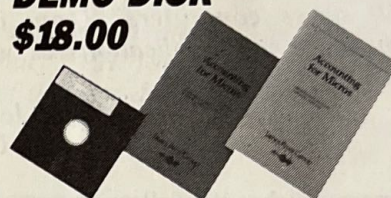
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it says to put the ".NUMBER" command on the *first line* of the file. Your letter states that you are putting it at the *end* of the file. Try putting the command at the top of the file per the manual and see if your problem is solved.

Q. In the review of M-Disk in the September '84 issue of *SOFT SECTOR*, the author explains setting up EasyWriter 1 to operate from the phantom drive. What benefit should be achieved? EasyWriter 1 already appears to be entirely memory resident.

Robert Warren, C.P.A.
El Paso, TX

A. There are two distinct advantages of using *EasyWriter* or any program with "RAM Disk" software. Number one is that you get an extra disk drive for a considerably lower cost (i.e., a two-drive system is now a three-drive system).

Number two, in the case of *EasyWriter*, all of the modules of the program are not in memory at one time; when you need one of the other modules you must go out to the disk drive. This is much slower than RAM access.

Q. I have an MBC-555-2 computer and a Smith-Corona D-300 daisy wheel printer. I would like to get as many of the functions as possible from the printer, but I am not sure how to relate what is in the printer manual with the Install program. Must the other MicroPro software packages be installed also?

H. Kadonaga
Calgary, Alberta

A. Regarding your Smith-Corona D-300 printer and the MBC-555-2 computer, in order to get the maximum benefit from *WordStar*, you must have information from the manufacturer which tells you if the printer emulates any of the printer types that are on the menus. If it does not

emulate any of them, then you must install it with the information from the owners manual. This can be done by following the "Making WordStar Shine" articles in the first two issues of *SOFT SECTOR* (August and September, '84).

If you cannot find out what printer the D-300 emulates, please send me a copy of the manual and a list of the functions you desire and possibly we can solve your problem.

It is not necessary to install the other software that came with the computer. They will work with virtually any printer on the market.

Additional manuals are available from your Sanyo dealer for *InfoStar*, *WordStar*, *MailMerge* and *SpellStar*. The *CalcStar* manual that came with the computer is complete and should be adequate.

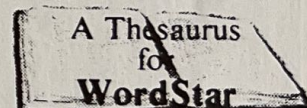
Q. How can I reprogram one of the function keys in *WordStar* to output "^PH" for the printing of accent marks rather than one of the user-defined functions.

Carlos Varela
New York, NY

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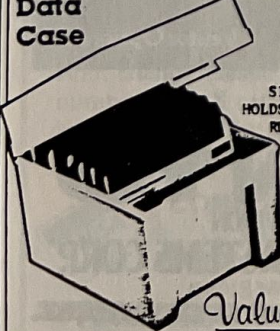

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A. You can change the function key of your choice to output “^PH” very easily. Use the *WordStar Install* program as you have done in the past and select ‘E’, Menu of *WordStar Features*. You will then be presented with another menu at which you should select ‘S’, Function Keys. You will now be able to select the function key of your choice to change. Follow the instructions on the screen and insert “^PH” (strike over) to replace the existing code.

Q. My reason for obtaining a computer system was to be able to generate cost and utilization analyses for prospects who are considering acquisition of the equipment I sell. To present these analyses, I wish to be able to generate comparative bar or pie chart graphs from spreadsheet data and print them for inclusion in my presentation.

I have talked to several Sanyo dealers and none of them have been able to provide me with answers to my questions.

Do I need additional equipment? How do I incorporate this into what I already do (text and spreadsheets)? Can it be done?

William M. Bigelow
Detroit, MI

A. There are two software packages that will allow you to create graphs and charts with the Sanyo MBC-550 series computers. They are *SuperCalc³* and *Master Graph III*. These programs are available from many computer dealers.

SuperCalc³ has built-in graphing functions and *Master Graph III* uses data generated by spreadsheet software.

Q. I have a Delta 10 printer and would like to be able to use it with WordStar. It is not on the menu and I do not know how to install it. Can you help?

J. Simmons
Lyndhurst, OH

A. If you will copy the owners manual and send it to us, I will attempt to furnish the information that you need to use your Delta 10 printer.

At this time, in order for you to be able to at least use the printer, try installing a copy of *WordStar* with “Standard Printer” as your selection. This works with virtually all printers, but you will not get some of the fancy features.

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Q. Recently you said that you can print double-spaced text by using the "**^OS**" command in WordStar. Well, I have a file that I tried it on and I cannot get it to work. My file is still printed single-spaced. Can you help me?

Efrain Rosa
Liverpool, NY

A. The information that I furnished regarding double spacing was correct. The part that I did not realize was that you wanted to have existing text double-spaced. Your existing single-spaced text can be converted to double-spaced by using the "**^B**" Reform command. Load your file into WordStar and from the first line do the following:

"**^OS**" — Answer the question with '2' for double-spaced text.

"**^QQ^B**" — Hold the CONTROL key and press 'Q' twice, then hold the CONTROL key and press 'B' to reform the text. This (**^B**) is the same as if you were going to reform just a paragraph, but it will continue until all of your text is double-spaced.

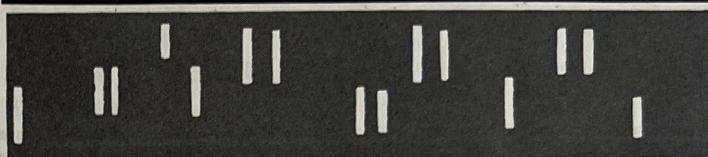
Some short lines that are terminated with a carriage return will have to be done manually, but those few will not be much of a job. I hope this solves your problem.

Q. How can I remove extra carriage returns from text

that have been put there in error during editing? The way I am doing it is very awkward. It must be easier.

M. Eugene Mockabee, Pastor
Kalispell, MT

A. The way to remove extra carriage returns from your text is to position the cursor at the first blank space past the end of the word where the extra carriage return is. Then hold the CONTROL and strike the 'T' key once. This should delete all of the blank spaces from the current cursor position up to and including the extra carriage return. If you still have a RETURN that needs to be removed, hold CONTROL and press the 'T' key again. This may cause your line to extend past your set margins. If so, move the cursor up one line in your paragraph and use the "**^B**" paragraph reform command to correct the text. You could also use CONTROL-G, single character delete, to remove extra spaces and the carriage return, then reform the text.



Notice To All Readers Regarding CalcStar

Recently many readers have written about problems with CalcStar. Some of the questions have to do with the speed of the program, others with calculations on row 32, etc. Because we did not write the program, nor are we machine language programmers, I have written to MicroPro with a collective list of problems. If and when we receive an answer, we will answer all of your letters and publish the information in this column.



(Charlotte A. Stone, office manager for the Detroit office of the Shaw/Walker Co., has been using a Sanyo computer in her daily work routine since October of 1983. Brian M. Stone has been using a variety of Sanyo computers since May of 1983. Charlotte and her husband, Brian, have been involved with computers since July of 1978 and presently own and use five computer systems on a daily basis, three of which are Sanyos.)

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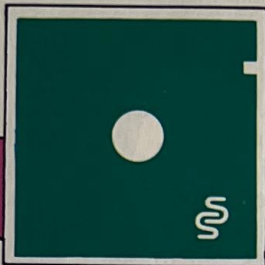
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*The next time you feel like life is a roller coaster ride,
remember that it's really just a sine wave in someone else's equation*

The Rise And Fall Of The Biorhythms

For those of you familiar with the theory of biorhythms, this simple program may allow you to experiment with observations from your own lives to decide whether you believe in the theory. For those of you unfamiliar with the theory, let's do a brief review.

As depicted in the popular press, each of us has three natural cycles that govern our lives. These three cycles began in phase at our birth, but exhibit different periods. One cycle supposedly governs our physical abilities and has a period of 23 days. The second cycle governs our emotional state and has a period of 28 days. The third period, governing intellectual matters, has a period of 33 days.

Each of these cycles is a sinewave that constantly swings from peak to valley and back. However, the theory does not attach any significance to either the peaks or the valleys, but to the zero crossings. When a given cycle crosses zero, that day is said to be critical for that cycle. If two cycles, or all three, cross zero on the same day, that day is said to be double- or triple-critical. The theory goes that it is the critical days that foretell important or catastrophic events. Some companies, for example, predict employees' critical days and give them those days off in an attempt to reduce on-the-job injuries.

(Shawn Bucy is a civilian physicist employed by the U.S. Air Force at Wright-Patterson AFB., Ohio. He recently graduated from the TI 99/4A home computer to the more powerful Sanyo MBC-550 and has written several programs in Sanyo BASIC and Turbo PASCAL.)

This BASIC program allows you to look at your biorhythms for any given month to predict your own critical days. You may be interested in examining the state of your biorhythms for specific important dates in your past. Check dates on which you may have had an accident, or the date of an important job interview. You may find some surprising correlations.

The program is entirely self-prompting, except for the instructions in lines 290 to 300 in the listing. The program is organized to allow you to insert program lines defining birth data for individuals by name. By encoding the names of family members or office members in permanent program lines, retrieval will be speeded. Follow the format of the sample lines 330 to 350 if you wish to use this feature of the program.

The `LINE` statements in lines 680 and 700 actually do the sinewave plotting of the biorhythm data. Any interrupt-operated screen dump utility can be used to make a hard-copy output of the graphs on your line printer.

The statements that appear in the program in the format `OUT &H3B,&HDB` create a sound output at one of four tone frequencies. The instruction `&HDB` equals 400 Hz, `&H66` equals 300 Hz, `&H18` equals 200 Hz, and `&H0` equals 100 Hz. Each of these statements is inserted in a loop to control the duration of the tone. This may be a useful feature to enliven other BASIC programs without resorting to a machine language routine.

The program is optimized to run on a monochrome monitor. Those of you with a color monitor may wish to add `COLOR` statements and modify the color suffixes on `LINE` and `SYMBOL` statements to obtain a more tailored display.



By
Shawn B. Bucy

Explanation Of The Program

Lines
 10-170 Listing header data and copyright statement.
 180-225 Introductory screen and copyright data.
 230-240 Dimension and assign number of days to each month, M(1-12), set total days alive equal/to zero.
 260-360 Enter name and check to see if name has internal data statement.
 370-390 Enter birth data if name is not resident in program.
 400-440 Enter data for year and month to check.

450-520 Calculate number of days alive to first day of test month.
 530 Set value of pi for sine calculations.
 540 Plot 29 days if test month of Feb. in a leap year.
 550-560 Start plot screen.
 570-590 Title for plot screen.
 600-740 Plot biorhythm data for test month.
 750-790 Flashing restart que.
 800 Sound subroutine.

Strings

NAM\$ = Name of person.
 MONTH\$ = Name of month being examined.
 MSG\$ = Name of curve being plotted.

Computation

YEAR = Year of birth.
 MONTH = Month of birth.
 DAY = Day of birth.
 Y2 = Year being examined.
 M2 = Month being examined.
 J, I, PAUSE = Indexing variables.

Variables

Arrays

M(1-12) = Number of days in each month.

The listing: BIO.BAS

```

10 REM *****
20 REM **
30 REM **          BIORHYTHM PROGRAM          **
40 REM **
50 REM **          S.G. BUCY                    **
60 REM **
70 REM **          116 Cimmaron Tr. Enon, Ohio 45323
80 REM **
90 REM **
100 REM **          MBC-550-2/256K/DSDD/MONOCROME
110 REM **
120 REM **          COPYRIGHT (c) 1984
130 REM **
140 REM *****
150 REM
160 REM
170 REM
180 COLOR 3,0:CLS:LOCATE 1,1,0: Y=110:X=20
190 LINE(1,1)-(639,199),7,B
200 SYMBOL(Y,X),"BIORHYTHM PROGRAM",3,3,3:FOR PAUSE=1 TO 50:NEXT
210 SYMBOL(Y,X),"BIORHYTHM PROGRAM",3,3,7:FOR PAUSE=1 TO 50:NEXT
220 SYMBOL(Y,X),"BIORHYTHM PROGRAM",3,3,3:FOR PAUSE=1 TO 50:NEXT
225 SYMBOL(272,60),"S.G.BUCY ",1,1,5:SYMBOL(243,70),"Copyright (c) 1984",1,1,5
230 DIM M(12):M(1)=31:M(3)=31:M(5)=31:M(7)=31:M(8)=31:M(10)=31:M(12)=31
240 M(4)=30:M(6)=30:M(9)=30:M(11)=30
250 M(2)=28:TOTAL=0
260 COLOR 7,0:LOCATE 20,5:GOSUB 800:INPUT "ENTER NAME-----: "
;NAM$
270 REM *****
280 REM **
290 REM **          CUSTOMIZE THE PROGRAM BY INSERTING STATEMENTS IN THE
300 REM **          FOLLOWING FORM.....
310 REM **
320 REM *****
330 IF NAM$="SHAWN" OR NAM$="shawn" THEN YEAR=47:MONTH=1:DAY=30:NAM$="SHAWN":GO

```



```

TO 430
340 IF NAM$="MALY" OR NAM$="maly" THEN YEAR=46:MONTH=3:DAY=9:NAM$="MALY":GOTO 4
30
350 IF NAM$="anna" OR NAM$="ANNA" THEN YEAR=71:MONTH=7:DAY=*:NAM$="ANNA":GOTO 43
0
360 REM *****
370 LOCATE 21,5:GOSUB 800:INPUT "ENTER YEAR OF BIRTH (2 digits)-----: ";YEAR
380 LOCATE 22,5:GOSUB 800:INPUT "ENTER MONTH OF BIRTH (1-12)-----: ";MONTH
390 LOCATE 23,5:GOSUB 800:INPUT "ENTER DAY OF BIRTH (1-31)-----: ";DAY
400 LOCATE 21,5,0:PRINT SPACE$(40);
410 LOCATE 22,5,0:PRINT SPACE$(40);
420 LOCATE 23,5,0:PRINT SPACE$(40);
430 LOCATE 21,5:GOSUB 800:INPUT "ENTER YEAR TO CHECK (2 digits)-----: ";Y2
440 LOCATE 22,5:GOSUB 800:INPUT "ENTER MONTH TO CHECK (1-12)-----: ";M2:LOCA
TE 22,5,0
450 REM CALC DAYS ALIVE TO START OF TEST MONTH
460 TOTAL=M(MONTH)-DAY
470 IF MONTH<3 AND YEAR/4=INT(YEAR/4) THEN TOTAL=TOTAL+1
480 FOR J=MONTH+1 TO 12:TOTAL=TOTAL+M(J):NEXT
490 FOR Y=YEAR+1 TO Y2-1:TOTAL=TOTAL+365
500 IF Y/4=INT(Y/4) THEN TOTAL=TOTAL+1
510 NEXT
520 FOR I=1 TO M2-1:TOTAL=TOTAL+M(I):NEXT
530 PI=3.14159
540 IF M2=2 AND Y2/4=INT(Y2/4) THEN M(M2)=29
550 CLS:LOCATE 25,1,0
560 LINE(1,1)-(639,199),7,B
570 MONTH$=" JANFEBMARAPR MAYJUNJUL AUGSEP OCTNOV DEC"
580 MONTH$=MID$(MONTH$,3*M2,3)
590 SYMBOL(30,4),NAM$+" 'S BIORHYTHMS FOR "+MONTH$+" 19"+MID$(STR$(Y2),2,2),2,2,7
600 FOR J=1 TO 3
610 FOR I=1 TO M(M2)
620 IF J=1 THEN PERIOD=23:V=5:MSG$="PHYSICAL"
630 IF J=2 THEN PERIOD=28:V=12:MSG$="EMOTIONAL"
640 IF J=3 THEN PERIOD=33:V=19:MSG$="INTELLECTUAL"
650 VALUE=SIN(2*PI*(TOTAL+I)/PERIOD)
660 VALUE=2*INT((100*VALUE)/100)
670 VV=V*8
680 LINE(15*I,VV-VALUE)-(15*(I+1),VV),2,BF
690 IF J=1 THEN OUT &H38,&H0 ELSE IF J=2 THEN OUT &H38,&H18 ELSE IF J=3 THEN OUT
&H38,&H66
700 LINE(15*I,VV-VALUE)-(15*(I+1),VV),7,B
710 LOCATE V,65:PRINT MSG$
720 NEXT :NEXT
730 FOR L=1 TO M(M2)
740 SYMBOL(5+(15*L),198),STR$(L),1,1,7,3:NEXT
750 FOR DUR=1 TO 50:OUT &H38,&HDB:NEXT
760 LOCATE 24,65:PRINT SPACE$(10);:LOCATE 24,65,0
770 FOR PAUSE=1 TO 150:NEXT PAUSE
780 PRINT "ANY KEY...";
790 IF INKEY$="" THEN 760 ELSE CLEAR:GOTO 180
800 FOR DUR=1 TO 30:OUT &H38,&HDB:NEXT DUR:RETURN

```



A Batch of Commands

By Danny Humphress
Soft Sector Technical Editor

When using MS-DOS on a day-to-day basis, there are many situations that require you to enter several separate commands, one after the other, waiting for each command or program to finish before going on to the next. And sometimes, you'll find yourself typing the same command line with about a half-dozen hard-to-remember parameters several times throughout the working day.

Wouldn't it be nice to be able to combine those several commands into a single command, or give that hard-to-remember command line a shorter name? It's not something to put on your wish list, because Microsoft has already provided this feature to us through MS-DOS's batch processing.

With batch processing, you create a "batch" file containing one or more DOS commands or program names.

[Editor's Note: Most of the commands covered in this installment of "Mastering MS-DOS" are not supported by MS-DOS Ver. 1.25. The filters mentioned, SORT, MORE and FIND, are not included on the MBC-550/555 system disk, but are integral parts of the MS-DOS operating system nonetheless. They are included on the system disks packaged with the MBC-775 and with Sanyo hard disk drives. Also, MORE is supplied on the Video RAM Board system disk and SORT, at least, is included on the MS-DOS 2.11 System Utilities Disk, available for \$15 from Sanyo Business Systems Corporation, Customer Support—Computer Division, 51 Joseph Street, Moonachie, NJ 07074. Only certified checks and money orders are now being accepted.]

When the batch file is "run" by typing the filename at the DOS prompt, the commands are executed in sequence. This allows you to put that long, complicated command line into a file with a short simple name.

For instance, the command line to back up all the data files in the payroll directory that have been updated since the last backup would be rather long and quite difficult to remember. However, you could put the command line in a batch file name PRSAVE.BAT and, from that point on, you would only have to type PRSAVE to get the job done. Additionally, if you often use CHKDSK (the command to check disk space) after FORMAT, you could combine the two commands into a batch file so that the whole process is automated.

Batch processing frees you from the computer's keyboard and lets you get on with more important things rather than redundantly entering commands and waiting for computer processing. You can, in many cases, give the computer a "batch" of things to do and do something else while the computer busily carries out your orders.

One of the frequent tasks of using any operating system is getting a copy of the disk directory on paper. It is quite simple to do by routing the output to the printer (see the past two installments of "Mastering MS-DOS") with this command:

```
DIR > PRN:
```

However, this requires a bit of extra thinking, especially for those new to

(Danny Humphress, SOFT SECTOR's Technical Editor, is the owner of a computer software and consulting firm in Louisville, Ky. Danny brings to SOFT SECTOR his extensive experience with small business computers and applications software.)

MS-DOS, and several more keystrokes. We could create a "new command" specifically for printing the directory with a batch file and call it PDIR for "Print DIRectory." We would have to put the proper MS-DOS command line in a file called PDIR.BAT with EDLIN, or the COPY CON: command.

Note that all batch files must end with the .BAT extension; this identifies them to DOS as batch processing files. If you are using MS-DOS 1.25, you will have to create the following examples with EDLIN or another text editor, such as WordStar's 'N' mode. For those of you using DOS 2.11, type these commands at the DOS prompt:

```
COPY CON: PDIR.BAT      ENTER
DIR > PRN:              ENTER
^Z                      ENTER
```

(To get ^Z, hold CTRL and press 'Z'.)

The command we typed from the console keyboard was stored in the file called PDIR.BAT. You may want to do a directory to verify that the file was stored on the disk. Whenever we type PDIR with this file on the disk, the disk directory will be sent to the printer. If

your printer is connected and ready, try our new command.

PDIR

ENTER

You'll remember from the two most recent "Mastering MS-DOS" articles that we were able to get a sorted directory listing with the SORT filter. We also used the MORE filter to pause the screen display one page at a time. This is done with this command line:

```
DIR | SORT | MORE
```

We could use a batch file here, just as with PDIR, to make it much easier for us to use this common command line. Just enter the line into a file called SDIR.BAT, or whatever name you find convenient, and what was once a cumbersome command becomes as simple as four letters.

Suppose you have a payroll program that runs in drive A: and you want the computer to automatically do a backup to drive B: after running the program. This could be easily accomplished by creating a batch file containing the command to run the program followed by the command to back up a disk

(DISKCOPY). Instead of entering the command to run the program, you would type the name of the batch file.

For instance, if the payroll program was run with the command line BASIC PAYROLL /F:4, we could create a batch file named PAYROLL.BAT to get us into payroll and then automatically go to DISKCOPY. This two-line batch file would do the job:

```
BASIC PAYROLL /F:4
DISKCOPY A: B:
```

Batch files can be named just about anything you like as long as you don't use names of MS-DOS commands or names of programs on the disk such as BASIC or DISKCOPY. The only other rule is that they must end with the .BAT extension.

AUTOEXEC

Did you ever use a program that automatically started when you turned on or reset the computer? This is done with a very special batch file called AUTOEXEC.BAT.

When you turn on your computer or press Reset, the computer searches the disk for a batch file called AUTOEXEC

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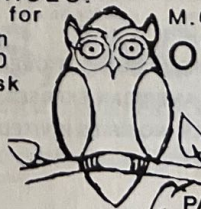
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.BAT. If it finds the file on the disk, the commands in the file will be executed automatically. If there is no AUTOEXEC.BAT on the disk, the computer asks for the date and time and takes you to the DOS prompt.

Creating an AUTOEXEC batch file is as easy as creating any batch file. You simply name your file AUTOEXEC.BAT. That's all there is to it.

Let's suppose you want to have your payroll program run automatically when you turn on your computer. All you would need to do is to put a command line such as BASIC PAYROLL /F:4 in a file called AUTOEXEC.BAT. The next time the computer is reset, the computer will automatically go to BASIC and run the payroll program. We could even make DISKCOPY A: B: the second line of the AUTOEXEC file as we did with PAYROLL.BAT.

One of the strange things about AUTOEXEC is that it bypasses the date and time questions that you normally see when you start MS-DOS and takes you directly to the first command line of the batch file. This can be overcome by using the DATE and TIME commands as the first two lines of your AUTOEXEC batch file. The batch file for the

aforementioned payroll program would look like this:

```
DATE
TIME
BASIC PAYROLL /F:4
DISKCOPY A: B:
```

With this AUTOEXEC file, the computer will first prompt the user for the date and time before running the payroll program.

A Batch of Batches

Just as you can use any valid MS-DOS command or program name in a batch file, you can also use the name of other batch files. For instance, we saw the example earlier of a batch file that would run our imaginary payroll program and then automatically go to DISKCOPY to back up the disk. We could run this batch file by simply typing PAYROLL at the DOS prompt.

The batch file, PAYROLL.BAT could also be used within another batch file such as AUTOEXEC.BAT. This would save us from typing the commands into two files, would save disk space, and would make it easier to change the procedure for entering the payroll program without having to modify two

files. Our AUTOEXEC file would look like this:

```
DATE
TIME
PAYROLL
```

The DATE and TIME commands would be performed as usual, but when the computer reached PAYROLL, control would be transferred to the commands in the batch file called PAYROLL.BAT. When the payroll batch file was finished, control would return to the next line, if any, in AUTOEXEC.BAT. You can use this method, to "nest" batch files within batch files within batch files to as many levels as you like.

More Control

MS-DOS's batch file processing abilities go beyond just running a series of commands. You can also use conditional branches, variables and error checking to make batch processing behave like a programming language. Don't let the term "programming" frighten you, though. Creating seemingly complicated batch processes is quite simple, as we shall see in the next installment of "Mastering MS-DOS."



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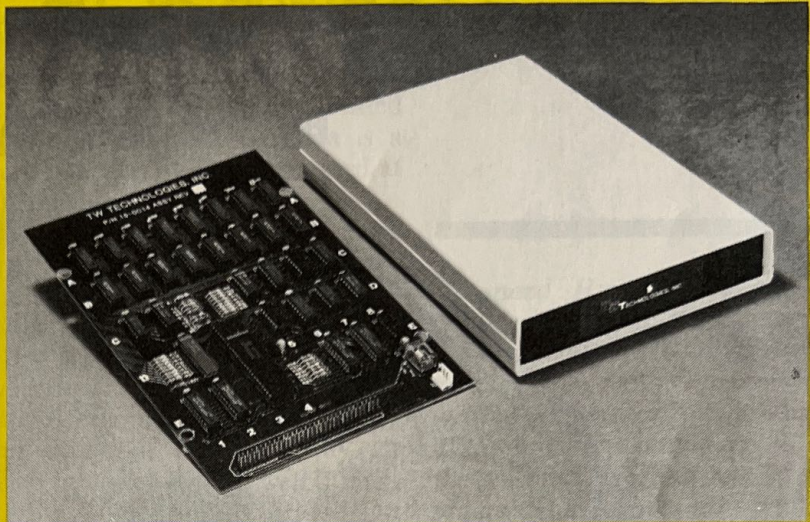
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Turn your monitor into a crystal ball
to see your economic future

IRA Projection

Retiring In Style

By Leonard Hyre



One of the best ideas the federal government has had in the last decade has to be the Individual Retirement Account (IRA). It gives the average person the chance to build a future retirement fund without paying the price of taxation on the money he or she puts away.

People who are considering such accounts invariably wonder about just how it all adds up, and rightly so. I love to plug in various figures and watch the theoretical interest come pouring in. You can get some practical use out of my *IRA Projection* program and, at the same time, kick around lots of figures just to be sure you are choosing the right investment plan and financial institution.

Your Sanyo has a powerful graphics capability just waiting to be turned loose. There is no need to make a program boring just because it has a practical nature. The ability to easily print in any color on any color background, along with being able to print exactly where you want with the LOCATE statement is a programmer's dream. Then, of course, there is the

powerful SYMBOL statement (eat your hearts out, non-Sanyo owners!). As a consequence I have included a little pizzazz in the otherwise work-oriented program.

After a title screen, we are ready to get down to business. The data required of the user is obtained via INPUT commands. The screen is then cleared and the formula applied to the data to give us the required figures. A loop is made up of the number of years to project. As each loop is completed, we have the answer for the year represented by G at that time. The formula is a standard one which can be obtained at any financial institution.

Now that we have the data, we need to display it. Here is where we can again thank Sanyo BASIC. The PRINT USING command makes things easy for Sanyo users. Many BASICS have nothing nearly as powerful for easy formatting. If for some reason, you may have lightly skipped over this command, by all means go back and learn it well. I must admit, this is one of my favorites. (Do you have to be crazy to have a favorite BASIC command?)

Only one thing to do now — let those with printers have an option to obtain a hard copy of the information. Even if you don't have a printer yet, you might want to go ahead and type this in for future use. Just don't hit 'P' or 'p' at the printer prompt.

IRA Projection is a relatively short program and should not present much of a typing challenge to you. I believe you will find the program worthwhile and interesting.



(Leonard Hyre works as a claims representative for the Social Security Administration. He has written several articles for THE RAINBOW and has written commercial programs for the TRS-80 Color Computer, the Apple II, the Commodore and the TI 99 computers. The author may be contacted at P.O. Box 403, Cambridge, MD 21613, 301-228-0064.)

The listing: IRAPROJ.BAS

```

10 ' *****
20 ' *   IRA PROJECTIONS   *
30 ' *       by L  HYRE   *
40 ' * *****
50 COLOR 4,0:CLS
60 SYMBOL(140,50),"I R A Projection",3,4,6,0
70 SYMBOL(135,100),"$ $ $ $ $ $ $ $ $ $",2,3,2,0
80 LINE(115,30)-(550,140),PSET,B
90 LOCATE 20,35:PRINT"by Leonard HYRE"
100 FOR C=1 TO 7:SYMBOL(140,50),"I R A Projection",3,4,C,0:NEXT
110 LOCATE 22,35:PRINT"< Press any key >";
120 AK$=INKEY$
130 IF AK$=""THEN 120
140 COLOR 4,3:CLS
150 PRINT STRING$(80,CHR$(206));
160 PRINT STRING$(25,CHR$(206));" Individual Retirement Account ";STRING$(24,CHR
$(206));
170 PRINT STRING$(80,CHR$(206));
180 COLOR 1
190 A=0:B=0
200 LOCATE 6,6
210 INPUT"YOUR NAME";N$
220 LOCATE 8,6
230 INPUT"TOTAL DEPOSIT PER YEAR";C
240 LOCATE 10,6

```



```

250 INPUT"ANTICIPATED % INTEREST";D
260 LOCATE 12,6
270 INPUT"NO. TIMES COMPOUNDED/YR";E
280 LOCATE 14,6
290 LC=5
300 INPUT"NO. YEARS TO PROJECT...";F
310 CLS:GOSUB 450
320 FOR G=1 TO F
330 A=(1+D/(100*E))^E*(A+C)
340 B=FIX((100*A)+.5)/100
350 LOCATE LC,8
360 PRINT USING"###";G;:PRINT USING"#####.##";B
370 LC=LC+1
380 IF LC=15 THEN LC=5
390 IF G/10=INT(G/10) THEN GOSUB 470
400 NEXT G
410 SYMBOL(10,170),"PRESS 'P' FOR PRINTOUT",2,2,4
420 SYMBOL(10,185),"ANY OTHER KEY FOR ANOTHER PROJECTION!",2,2,0
430 AN$=INKEY$:IF AN$=""THEN 430
440 IF AN$="P" OR AN$="p" THEN 520 ELSE 140
450 XA$="IRA Projection for:":XX$=XA$+N$:SYMBOL(10,10),XX$,2,2,4,0
460 RETURN
470 LOCATE 6,40:COLOR 0:PRINT"< Press any key to continue >":COLOR 4
480 LOCATE 7,40:PRINT"_____":COLOR 1
490 AN$=INKEY$:IF AN$=""THEN 490
500 CLS:SYMBOL(10,10),XX$,2,2,4
510 RETURN
520 CLS
530 SYMBOL(10,20),"PRINTING OPERATION IN PROGRESS",2,2,4,0
540 SYMBOL(10,50),"ONE MINUTE PLEASE!",2,2,0
550 LPRINT STRING$(80,"=")
560 LPRINT"INDIVIDUAL RETIREMENT ACCOUNT PROJECTION FOR: ";N$
570 LPRINT "BASED ON DEPOSITS OF $";C;" OVER ";F;" YEARS"
580 LPRINT "ANTICIPATED INTEREST RATE IS ";D;"% COMPOUNDED ";E;" TIMES/YEARS"
590 LPRINT STRING$(80,"-")
600 H=0
610 A=0:B=0
620 FOR G=1 TO F
630 A=(1+D/(100*E))^E*(A+C):B=FIX((100*A)+.5)/100
640 LPRINT TAB(25);
650 LPRINT "YEAR # ";:LPRINT USING"###";G;:LPRINT"      ";:LPRINT USING"#####.##"
;B
660 NEXT G
670 LPRINT:LPRINT TAB(13);"TOTAL DEPOSITS=";:LPRINT USING"#####.##";C*F;:LPRINT
"FOR NET INCREASE OF ";:LPRINT USING"#####.##";B-(C*F)
680 LPRINT:LPRINT STRING$(80," ")
690 SYMBOL(10,140),"OPERATION COMPLETED",2,2,4
700 BEEP
710 FOR DL=1 TO 400:NEXT
720 LOCATE 23,6:PRINT"Do you want another projection ? ( Y/N )"
730 AP$=INKEY$:IF AP$=""THEN 730
740 IF AP$="Y" OR AP$="y"THEN 140
750 IF AP$="N" OR AP$="n"THEN END
760 GOTO 740

```


Putting The Hidden Files Where You Can Find Them

By Ray C. Robinson

Here is a short BASIC program that will create two .COM files: SHOW.COM will cause IO.SYS and MSDOS.SYS, the two hidden files on an MS-DOS system disk, to become visible, while HIDE.COM will make them invisible again.

The machine language program contained in SHOW.COM

and HIDE.COM utilize the change attributes (function 43H) of MS-DOS Ver. 2.11, so you must have this version or higher to use the program. MS-DOS Ver. 1.25 disks, however, can be changed in a machine running Ver. 2.11.

Key in and run the following program to create the .COM files:

The listing: CHANGE.BAS

```
100 *****CHANGE, A PROGRAM TO CREATE SHOW.COM & HIDE.COM FILES*****
110 *****SHOW.COM WILL CAUSE IO.SYS & MSDOS.SYS TO BECOME VISIBLE*****
120 *****HIDE.COM WILL CAUSE THEM TO BECOME INVISIBLE*****
130 *****BY RAY C. ROBINSON, MARCH 1985*****
140 DEFINT I
150 RESTORE 280
160 CF$="":FOR I=0 TO 40
170 READ HB$:IF HB$="XX" THEN HB$="00"
180 CF$=CF$+CHR$(VAL("&H"+HB$))
190 NEXT I
200 OPEN "A",#1,"SHOW.COM":PRINT #1;CF$;:CLOSE #1
210 RESTORE 280
220 CF$="":FOR I=0 TO 40
230 READ HB$:IF HB$="XX" THEN HB$="07"
240 CF$=CF$+CHR$(VAL("&H"+HB$))
250 NEXT I
260 OPEN "A",#1,"HIDE.COM":PRINT #1;CF$;:CLOSE #1
270 END
280 DATA B8,01,43,B9,XX,00,BA,18,01,CD,21,B8,01,43,B9,XX,00,BA,1F,01,CD,21,CD,20,
,49,4F,2E,53,59,53,00,4D,53,44,4F,53,2E,53,59,53,00
```

After the program has been keyed in and run, return to the operating system. A DIR command should now show the existence of SHOW.COM and HIDE.COM. If you now type SHOW and press ENTER, the disk will fire up and then stop. IO.SYS and MSDOS.SYS should now be visible in the directory.

Once IO.SYS and MSDOS.SYS are visible, they can be loaded into DEBUG and modified. In my machine, for example, the BEEP routine is located at 0BE4:1345 in DEBUG. If the first byte at 1345 is modified with DEBUG's E command to 'C3' (a return instruction), and the change is written to the disk with the W command, the BEEP is eliminated completely. If the byte at location 1346 is changed to '01', the BEEP will consist of one tick (the location presently holds '0A', or 10 ticks).

For those interested, below is the assembly listing of the .COM files generated by the BASIC program:

MOV	AX,4301	AX=function 43 and write to disk
MOV	CX,000X	CX=0000 visible, CX=0007 invisible
MOV	DX,011B	DX=location of data 'IO.SYS'
INT	21	Make IO.SYS visible/invisible
MOV	AX,4301	Restore register
MOV	CX,000X	Restore register
MOV	DX,011F	DX=location of data 'MSDOS.SYS'
INT	21	Make MSDOS.SYS visible/invisible
INT	20	Return to DOS
DB	'IO.SYS'	Data
DB	00	Indicate end of data
DB	'MSDOS.SYS'	Data
DB	00	Indicate end of data



INPUT/OUTPUT

TIM PURVES
Soft Sector Contributing Editor

Q. *I have recently added the new video board. Everything seems to work fine except for when I use the CLS command. All I get is a "←[2J." What seems strange is that the CLS command in BASIC works fine. Help!*

*A.C. Dahlgren
Sepulveda, CA*

A. The reason you get the odd looking control codes is because you don't have the ANSI driver loaded. To load the ANSI driver you need two additional files on the disk. The first one is CONFIG.SYS and the second is ANSI55.SYS. Copy both of these files from your master diskette. The CONFIG.SYS file should have one line in it that reads DEVICE=ANSI55.SYS. With these files on the diskette, the next time this disk is booted the ANSI driver will be loaded.

Q. *I have been trying to obtain information on the MB8877 disk controller so I can write a concurrent multitasking FORTH environment for real-time applications. Do you have any data sheets on this chip?*

*Alan Lin
Melbourne, FL*

A. The disk controller in the Sanyo is an electrical equivalent of the Western Digital 1793. They can be reached at 2445 McCable Way, Irvine CA 92714.

Q. *I have an MBC-550-2 with one drive and 128K of memory. I cannot copy a single file from one disk to*

another. The program DISKCOPY works fine, but to duplicate the entire disk for one file is a bit of an overkill. The MS-DOS manual states that the format of the command is:

`COPY A:filename B:filename`

The DOS is supposed to recognize the fact that there is only one drive and tell me to swap disks. Can I copy a single file? What is the syntax?

*Ed Kerns
Evansville, IN*

A. The problem stems from the fact that Sanyo didn't make the BIOS exactly like the IBM BIOS. In the IBM BIOS there is a routine that detects whether only one drive is installed and any reference to the B: drive will prompt for a disk swap. Sanyo's answer to this is the program SCOPY.EXE. This program works by reading as much as it can into memory and then copying that file to the next disk. Actually this works much better than the IBM method. The SCOPY program is available on Sanyo's utilities disk.

Q. *With 128K of memory and BASIC loaded I have about 27K available for programming. Please reveal the usage of the other 101K of memory.*

*Ed Kerns
Evansville, IN*

A. To take full advantage of the Sanyo, you really should have 256K of memory. This is the ideal amount of memory

for most applications. The following memory usage map assumes MS-DOS 2.11 and 128K of memory.

Address	Range	Usage	Approximate Size
0000:0000	0000:3fff	Interrupt tables	1K
0040:0000	0040:4000	Sanyo BIOS code	16K
0440:0000	0440:5000	MS-DOS resident code	20K
0940:0000	0940:1000	Resident part of COMMAND.COM	4K
0a40:0000	—	Application load area varies in size	
xxxx:xxxx	—	Transient portion of COMMAND.COM overwritten by application program	
1c00:0000	1c00:3fff	Green screen display	16K
f000:0000	f000:3fff	Red screen display	
f400:0000	f400:3fff	Blue screen display	
		NOTE: the red and blue screens are not part of the user memory	
fc00:0000	ffff:ffff	IPL and character ROM	
		— top of memory —	

As you can see, just to bring up the A> prompt, MS-DOS uses about 57K of memory. Add 50K for BASIC and you have just used 107K of memory, leaving about 20+K for your BASIC application. However, if you have a 256K

machine, then there is about 130K free in BASIC. Try that trick in your local IBM BASIC!

Q. Is there any way to save and load the contents of the screen to and from a disk file? I know that LOAD "filename",B is like BLOAD. Is there a command like BSAVE?

Robert Craig
Fort Collins, CO

A. There is no command in Sanyo BASIC to do a BSAVE that I know of. However, there are programs like ScreenSave that take the contents of the screen and save it to a disk file. Another way is to GET the screen into an array and then write the contents of the array to disk.

Q. I have recently added a Video RAM Board to my machine and my Panasonic 1300D monitor displays garbage when connected to the video board. I am told this is because the Panasonic monitor is a negative sync and the video board is positive sync. Is there any way to modify the monitor to accept both positive and negative sync?

Eric Bursten M.D.
Columbus, OH

A. What you need is a cable adapter that also inverts the sync pulses. The color signals are OK. A company

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in Michigan, Level IV Products, manufactures such a cable. The cable mounts on the video board and has a connector that accepts the normal Sanyo RGB cable. I have personally tested this on the Panasonic 1300D monitor and it works quite nicely.

Q. When I try to open a file in BASIC with a buffer number greater than four, I get a bad file number. I thought the buffers went up to 15. Can you explain this one?

Fred Hall
Sequim, WA

A. The problem stems from the fact that Sanyo BASIC defaults to a maximum of three file buffers. If you need more, you must specify this upon entering BASIC. The format of the command is as follows:

```
BASIC "filename" /F:n
```

Filename is the name of the program to be executed and 'n' is a number from one to 15 specifying the maximum number of file buffers to be allocated.

Q. Having written a Turbo PASCAL routine to map the keyboard codes on my Sanyo 555-2, I have found that SHIFT-CONTROL-TAB did not map. Instead, it crashed the

system. Can you tell us 555 users how this combination is wired or firmware programmed to produce this activity, and why?

Also, thanks for your Beep program. It cuts out a two-minute beep routine built into the Video RAM DOS. The two commented out lines are puzzling, though. They make reference to DS-DOS. Will BEEP.COM work with DS-DOS (I plan to get it next week) or should it be modified?

James Wilson
Arlington, VA

A. The video board DOS maps the keys SHIFT-CONTROL-TAB to the same keys as the IBM'S SHIFT-CONTROL-DELETE, which performs a system reboot. Also, the keys SHIFT-CONTROL-DELETE will perform a screen dump. It seems someone at Sanyo got their keys backward.

The two-minute bell under the video DOS is also another bug. In fact, the duration of the bell is somewhat random; seems someone at Sanyo called the wrong label. And the CX register never gets loaded. BEEP.COM fixes this and is just one of the many programs that comes with DS-DOS Plus.

Q. Your new beep routine works fine in BASIC and DOS programs, but in one program, EasyWriter I Ver 1.30, it seems to have no effect. What gives?

E.R. Baily
East Brady, PA

A. The reason that the Beep program doesn't affect EasyWriter is that they ignored the BIOS to ring the bell. They wrote the program to ring the bell by writing directly to the Sanyo hardware. I don't have a copy of EasyWriter available right now, but if you use DEBUG.COM on EWPRMQ.COM and search for an "out 38h,al" you will find the beep routine. Just replace the code there with the new beep code and save it out.

Q. I don't understand how to create an AUTOEXEC.BAT file with EDLIN. Could you show me a sample for DataStar?

Ed Neitzel
Oxnard, CA

A. First I would like to say that after years of using line editors, I refuse to learn another. In fact, I don't even use the editor in BASIC. I use WordStar. Besides, using EDLIN to create an AUTOEXEC.BAT file is a bit of overkill. A much easier approach is to use the built-in DOS COPY command. The following sequence will create a file that loads DataStar.

COPY CON AUTOEXEC.BAT	ENTER
DATE	ENTER
TIME	ENTER
DATASTAR	ENTER
PF6	ENTER

Note: Under DOS 1.25, the PF6 should be a CONTROL-Z.

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Microsoft's *Flight Simulator* has come to be regarded as one of the best-loved programs for the IBM PC and compatibles, with what borders on a fanatical following. *Flight Simulator* is a program that reaches across all age and interest boundaries. It is said, with just cause, that the ability to do well with this program is proportional to the ability to fly a real aircraft. That's how realistic *Flight Simulator* is.

But even beyond its popularity as a game and educational program, whether *Flight Simulator* will run on a particular computer has become somewhat of a benchmark as to how IBM PC compatible that particular model of computer is. The following keyboard patch allows *Flight Simulator* to run on the Sanyo MBC-555 with the Video RAM Board installed.

You will need the following to run *Flight Simulator*:

- 1) Sanyo MBC-555-2 (two double-sided drives)
- 2) Sanyo Video RAM Board
- 3) The operating system for the Video RAM Board
- 4) Microsoft *Flight Simulator*
- 5) This patch program

I would like to extend my special thanks to Robert F. Soloman for his definitions of the keys needed to operate *Flight Simulator* and the definitions for the remapped keys needed on the Sanyo 550/555.

Why do you need a patch program? *Flight Simulator* uses a direct keyboard input technique, which looks for keyboard input at the location where it normally is on the IBM PC or PCjr computers. This patch program redirects the keyboard requests to the Sanyo keyboard.

That sounds simple enough, but there are other problems. The IBM keyboard generates a scan code for every key on the keyboard; the Sanyo does not. The following IBM scan codes are *not* generated on the Sanyo: CONTROL, left SHIFT, right SHIFT, ALT, NUM LOCK, CAPS LOCK, Keypad '-', Keypad '+', Keypad '5' and the INSERT key.

To run all the functions of *Flight Simulator*, the following keystrokes are utilized:

NUM LOCK	Selects radar view
Keypad '5'	Selects down view and centers the stick
INSERT	Moves the rudder left in the uncoupled mode
Keypad '+'	Moves the rudder right in the uncoupled mode

This implementation of the *Flight Simulator* patch provides NUM LOCK and Keypad '5'. INSERT and Keypad '+' are still not implemented, but only an experienced pilot would be disappointed by the lack of rudder control.

You cannot make a backup copy of *Flight Simulator* on the Sanyo computer, nor can you save user modes. You can make your backup copy on an IBM PC or true compatible. If necessary, take your original to your local computer dealer to make the backup.

Editors Note: It has been noticed, however, that the patch loads the original program without difficulty, but you may have some problem loading copies.

The following key variations need to be noted. All descriptions define the Sanyo equivalent of the IBM function.

- 1) View Selector is the Sanyo BREAK key.
- 2) Nose Up is Sanyo Keypad '5'.
- 3) Nose Up Trim is Sanyo Keypad '2'.
- 4) Views available from the View Selector are as follows:

Front	Keypad 8
Left Front	Keypad 7
Left	Keypad 4
Left Rear	Keypad 2
Rear	Keypad 5
Right Rear	Keypad 3
Right	Keypad 6
Right Front	Keypad 9

Stick Center and Downward View: To activate this function use the asterisk key (*), either the one on the keypad or the one next to the right SHIFT key.

Radar Select: This is selected using the '<' key next to the left SHIFT key. The radar zoom works with the '+' and '-' keys on either the main keyboard or the numeric keypad.



To operate the program, format a disk and place a copy of this program, FLIGHT.COM, and DEBUG.COM on it.

Boot up the video board DOS and log onto the B: drive. Place the disk with FLIGHT.COM and DEBUG.COM in drive B:. Now place the *Flight Simulator* disk in drive A:.

Next, from the B> prompt, type FLIGHT /1 or FLIGHT /2, depending on the version of the Microsoft *Flight Simulator* that you are using. Most versions need the /2 option. The screen will now show the copyright message and wait for a keypress.



Into The Wild Blue

Microsoft's Flight Simulator On The MBC-555

Flight Simulator should now load and run automatically. Happy flying!

This program has been placed in the public domain and may be downloaded from the following bulletin boards, as well as being available on the May '85 edition of SOFT SECTOR ON DISK. It is slightly different from the one supplied on Sanyo's Video RAM Board Utilities Disk.

Level IV Download
(313) 525-3040
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(313) 348-4479
Ralph Landry (SysOp)



REQUIRES
— TWO DOUBLE-SIDED DRIVES —
— VIDEO RAM BOARD —

By Tim Purves
Soft Sector
Contributing Editor

(Tim Purves is an expert on the Sanyo 550/555 series computers and is an experienced programmer in assembly code, PASCAL, C and BASIC.)

The listing: FLIGHT.COM

```

;
;
;      MICROSOFT flight simulator path program
;      (c) 1984,85 PURVES COMPUTER SYSTEMS SOFTWARE
;      Program by Timothy Purves
;      Released into Public Domain
;      All versions of this code must display the
;      copyright notice
;
; debug.com and this program must be in the default drive
;                               (drive b: or higher)
; drive a: must contain the flight simulator disk
;
; this program loads and executes debug which in turn executes
; the flight simulator. You must have a 40 trk drive a: and the
; video board and 'video board dos'
;
;
; to use be logged to a drive (B: or higher and enter flight /1)
; or flight /2 (depends on the version)
;
;
code      segment
          assume  cs:code,ds:code
          org     1000h                ; org for com file

start:
          jmp     over
outm      db      13,10,'Out Of Memory',13,10,7,'$'
debug     db      13,10,'Debug Not Found',13,10,7,'$'
tmp       db      'tmp.$$$',0
null      db      'nul',0
file      db      'debug.com',0
handle    dw      0

evron     dw      0
cmd       dd      0
fcb1      dd      0
fcb2      dd      0

patch2    db      'na:fs.com',13      ; debug commands
          db      'l',13              ; load program
          db      'g129',13           ; execute past protection
          db      't',13              ; a little more
          db      'g12d',13
          db      'a27d5',13          ; add in new keyboard
          db      'int 40',13         ; my driver
          db      'jmp 27f8',13       ; we are done
          db      13
          db      'edce1 ec 03',13    ; patch hardware
          db      'edce6 ee 03',13    ; interrupts
          db      'edcfe e0 03',13
          db      'edd03 e2 03',13
          db      'e234f 90 90',13
          db      'e27f4 90 90',13
          db      'g',13              ; start flying
patch21    equ    $-patch2

patch1     db      'na:fs.com',13     ; this is for version
          db      'l',13              ; 1 flight simulator
          db      'g129',13
          db      't',13
          db      'g12d',13

```


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```

db      'a27d5',13
db      'int 40',13
db      'jmp 27f8',13
db      13
db      'edcc1 ec 03',13
db      'edcc6 ee 03',13
db      'edcde e0 03',13
db      'edce3 e2 03',13
db      'e234f 90 90',13
db      'e27f4 90 90',13
db      'g',13
patch11 equ    $-patch1

```

```

ver      dw      patch2
len      dw      patch21
old40    dd      0

```

```

keyint:                                     ; my keyboard interrupt
push     ds
xor      bx,bx
mov      ax,0fc00h                        ; rom bios table
mov      ds,ax                            ; ds = rom table
in       al,3ah                           ; uart status
test     al,2                             ; char in?
jz       keyout                           ; just noise exit out
test     al,8                             ; is cntrl key pressed?
je       norm                             ; jmp if no
add      bx,200h                          ; adjust for cntrl key

norm:
xor      ah,ah                            ; clear msb
in       al,38h                           ; key value
shl      ax,1                             ; index word tbl
add      bx,ax                            ; get scan value
mov      ax,[bx]
xchg     al,ah                            ; xchg for fs.com
cmp      al,33h                           ; is is '<'
jnz      _001m
mov      al,45h                           ; remap '<' to ibm numlock key
jmp      short bye

_001m:   cmp      al,37h                    ; is it '*'
jnz      bye
mov      al,4ch                           ; remap '*' to ibm '7 key'

bye:     pop      ds
         iredt                                     ; back to fs

keyout:
xor      ax,ax                            ; noise exit
pop      ds
iredt

over:
mov      dx,offset sigon                  ; print opening
mov      ah,9                             ; screen
int      21h
mov      si,80h                           ; command tail
cld                                           ; direction forward
lodsb                                        ; get lenght
mov      cl,al
xor      ch,ch                             ; move to cx
jcxz     done                             ; default is /2

srch:
lodsb                                        ; scan for '/'
cmp      al,'/'
loopnz   srch
jcxz     done                             ; still default
lodsb                                        ; next char
cmp      al,'1'
jnz      done
mov      ver,offset patch1                ; setup for version 1

```



```

done:  mov     len,patch11

mov     ax,0c08h          ; flush and wait for a
int     21h              ; key input
mov     dx,offset load    ; display loading....
mov     ah,9
int     21h
mov     ah,35h            ; get old int 40
mov     al,40h
int     21h
mov     word ptr old40,bx
mov     ax,es
mov     word ptr old40+2,ax
mov     ah,25h            ; setup new int 40
mov     al,40h
mov     dx,offset keyint
int     21h

mov     bx,2ch            ; setup for execute of
mov     ax,[bx]           ; debug
mov     evron,ax
mov     ax,cs
mov     word ptr cmd,offset 80h
mov     word ptr fcb1,5ch
mov     word ptr fcb2,6ch
mov     word ptr cmd+2,ax
mov     word ptr fcb1+2,ax
mov     word ptr fcb2+2,ax

mov     ax,cs
mov     es,ax
mov     bx,offset lastbyte+16
shr     bx,1
shr     bx,1
shr     bx,1
shr     bx,1
mov     ah,4ah            ; shrink block of memory
int     21h
jc      outexit           ; error in shrink

mov     cx,0              ; create tmp.$$$
mov     dx,offset tmp
mov     ah,3ch            ; create
int     21h
jc      outexit           ; error in create
mov     handle,ax         ; write out code for debug
mov     bx,ax
mov     cx,len            ; lenght
mov     dx,ver            ; buffer
mov     ah,40h
int     21h              ; write
jc      outexit           ; error in write exit
mov     bx,handle
mov     ah,3eh            ; close
int     21h
jc      outexit           ; close tmp.$$$
mov     dx,offset tmp     ; reopen file tmp.$$$
mov     al,0              ; open
mov     ah,3dh
int     21h
jc      outexit           ; error in open
mov     bx,ax             ; force tmp.$$$ to stdin
mov     cx,0
mov     ah,46h
int     21h
jc      outexit           ; error in force to => stdin

mov     dx,offset null    ; open a bit bucket

```




```

mov     al,1
mov     ah,3dh
int     21h
jc      outexit      ; error in bit bucket
mov     bx,ax        ; force stdout to null
mov     cx,1
mov     ah,46h
int     21h
jc      outexit      ; error in force

mov     ah,4bh        ; execute debug
mov     al,0          ; input from 'tmp.$$$' out to 'NULL'
mov     dx,offset file
mov     bx,offset evron
int     21h
jnc     ok            ; exec is ok should never come here
mov     dx,offset debug
cmp     ax,2          ; error 2 means no debug
jz      exit          ; else out of memory

outexit:
mov     dx,offset outm

exit:
cld
mov     si,dx          ; go forward
mov     si,dx          ; message in ds:[dx] now ds:[si]
_004:   lodsb          ; get byte
cmp     al,'$'         ; quit if '$'
jz      ok
mov     bx,7           ; bios tty routine
mov     ah,0eh
int     10h            ; use bios because stdio is forced
jmp     _004           ; to 'NULL'

ok:
mov     bx,handle      ; was tmp.$$$ created
or      bx,bx
jz      _001           ; can't kill what we don't have
mov     dx,offset tmp  ; kill 'tmp.$$$'
mov     ah,41h
int     21h

_001:   lds     bx,old40 ; replace old int 40
mov     dx,bx
mov     ah,25h
mov     al,40h         ; back to command.com
int     21h
int     20h            ; bye!!

lastbyte db 0

sigon   db 13,10,'MICROSOFT Flight Simulator Loader (c) 1984 Purves Computer Systems Software'
db 13,10,'Program by Timothy Purves',13,10
db 13,10,'Placed in the Public for use by the Public'
db 13,10,'No Commercial Value. ',13,10
db 13,10,'Place the Flight Simulator in drive A:'
db 13,10,'Place this Program (FLIGHT.COM) and a copy of DEBUG.COM in the default drive'
db 13,10,'Now Type FLIGHT /1 or FLIGHT /2 depending on the version of FS',10
db 13,10,'The Flight Simulator should now load and run'
db 13,10,"If the /1 don't work try the /2"
db 13,10,10,'Also because of the way DEBUG handles Real Time Interrupts'
db 13,10,'The Patch(s) may not always work, just reboot and try again'
db 13,10,10,'Press any Key $'
load    db 13,'Loading ..... $'

code     ends
end       start

```


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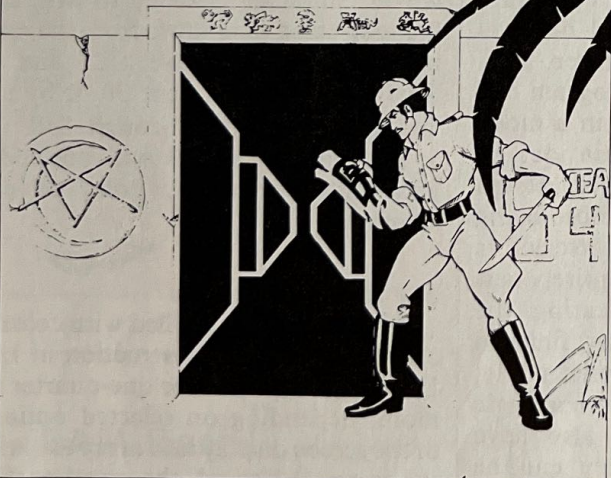
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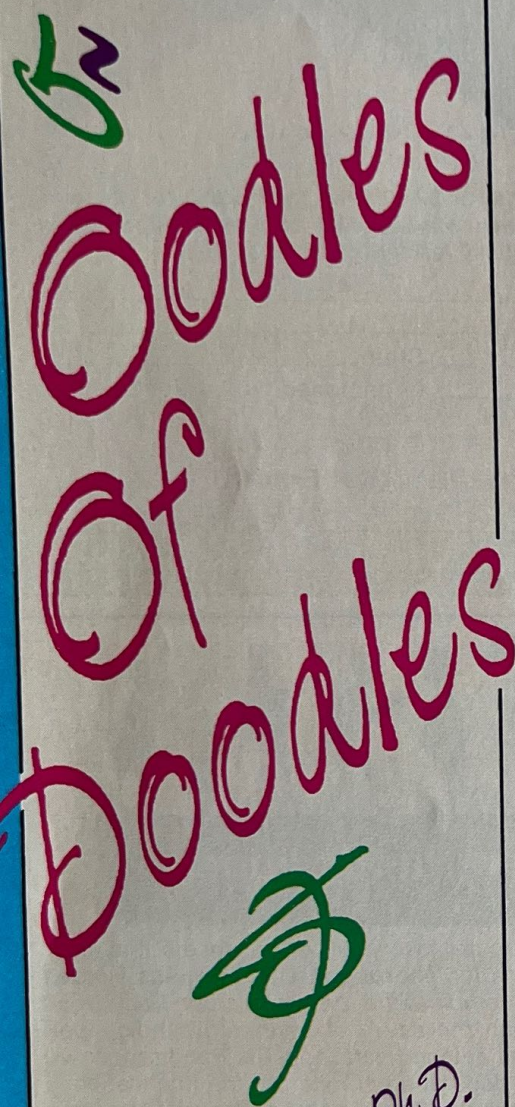


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By Thom Harris, Ph.D.

(Thom Harris has been involved in university teaching, research and public service for over seven years. He has extensive experience with statistical analysis programs and has written programs in BASIC for various applications. He may be contacted at 24018 Palo Duro Dr., Hockley, TX 77447; 713-373-1659.)

Have you ever thought that some of the artistic designs used for items such as floor and wall coverings, draperies, shower curtains and even fashionable apparel, may have been created by someone "doodling," perhaps while thinking of a polite way to say no during a long telephone sales pitch or while pretending to take notes at some dull meeting? Doodling has often been regarded as a byproduct of underemployed genius, rising to the surface as a subconscious creative expression. It is generally a vain exercise when consciously forced.

Your Sanyo MBC-550/555 computer certainly has many characteristics of genius. Its aptitude to "subconsciously" select thousands of different sequences of random numbers, merely as a byproduct of the substrate of numbers upon which it operates, is perhaps the most convincing evidence that the computer population really does have "artificial intelligence." When this attribute is teamed with the Sanyo's graphics capabilities, it can create millions of different fundamental graphics patterns and can "doodle" them into dazzling designs. And at a rate even the most artistic of mortals can barely imagine, either consciously or subconsciously.

DOODLER.BAS is a graphics program which randomly creates and displays colorful designs on your screen by a process of doodling. The program can be run in a demo mode or in a mode where you can set certain design characteristics. Each finished design pauses for a few seconds before being cleared, then displayed in reverse colors for a few seconds. Then an entirely new design is created by repeating the process. You can cause any finished design to be displayed indefinitely, abandoned or redisplayed with a single key command. You can also save designs on disk where they can be redisplayed even years later. When an appropriate screen dump program is used, your designs can also be hard-copied by a graphics or color printer.

How The Program Works

Sanyo BASIC's powerful SYMBOL instruction is used to draw alphanumeric characters on the screen, column-by-column and line-by-line,

with each displayed in one of six chromatic colors corresponding to the Sanyo's color codes, and each selected from a chosen segment of the extended ASCII set (lines 140 to 160). As the variable H (Line 140) increases from zero to $25/M-1$, a line of characters is written. The number of lines is determined by the variable M, which is the vertical magnification of characters drawn by the SYMBOL instruction. Similarly, the number of symbols to be placed on each line is determined by V, which depends on the horizontal magnification, also M. These magnification factors are set at 5, 12 or 25 (lines 110 to 120), depending on user input, or at 25 on odd numbered and 12 on even numbered designs when the program is run in the demo mode (Line 130).

The expressions $\Theta * V * M$ and $\Theta * H * M$ (Line 150) compute the X and Y graphics coordinates of where the upper-left corner of each character is to be located. These vary according to row and column location and magnification factors. The constant Θ in these expressions accounts for the number of vertical and horizontal dots which make up each character of the Sanyo's eight-by-eight character box. The function $\text{CHR}\$(\text{INT}(\text{ES}-\text{BS}) * \text{RND}) + \text{BS})$ defines which character is to be drawn, each being selected at random from the range in ASCII values between ES and BS. This range is set in Line 30 or by user input in lines 790 through 840. The integer value of $\text{G} * \text{RND}$ (with one added) randomly selects the color of each character.

The Doodling Process

After the screen is filled with colorful characters, the GET instruction in Line 290 captures the center one-quarter (or more, depending on selected options) of the screen display into array A%. After the screen is cleared, the saved portion of the design is PUT back on the screen in each of the four quarters by lines 330 to 340. The doodling action is accomplished by taking the center of this new pattern into array A% and PUTting it over the existing display without first clearing the screen. This process is executed three times (counted by C1 in Line 350) and results in a uniform pattern of the design over the whole screen.

main menu is displayed, where you can select Item 3 to give your file a name and it will be saved without further input. *7

Errors In BASIC And Other Precautions

If you are using versions of BASIC prior to the 1.25 release, drawing of the spade character CHR\$(6) by the SYMBOL instruction will sometimes cause a string of characters to be generated and will occasionally cause an error condition, among other strange things. You can prevent this by changing the value of BS in Line 30 from 1 to 7 and avoid selecting card symbols for designs until

you can upgrade your BASIC.EXE program to a later version.

The ON ERROR statements in lines 990 and 1300, after execution, will activate the printing of "file not found" error messages on any kind of error, including syntax errors. You can cause the interpreter to print the correct error message by changing the ON ERROR statements in these lines to comments until the program is otherwise keyed in correctly.

Users of 128K systems should allocate as much memory as possible to BASIC before running this program, especially if a DOS with enhanced features, such as for 80-track drives, is used along with an active screen dump program. If you don't have at least about 27,168 free

bytes displayed upon loading BASIC, you may be able to load DOODLER.BAS, but you're likely to get an "Illegal function call in 20" error upon attempting to run the program. Try removing all memory-resident options which you may have installed with AUTOEXEC.BAT or CONFIG.SYS files, except your screen dump, and then activate BASIC with the BASIC/F:1 option.

If this still doesn't enable a successful run, try deleting all comment lines and statements from the program, which should not affect its execution. If all else fails, including switching to a more primitive DOS, delete program lines 1490 through 1820 and remove all references to these lines from the program.

The listing: DOODLER.BAS

```
10 'DOODLER.BAS BY T. S. HARRIS 2/27/85 @ 20:10
20 CLEAR,922 :DIM A%(7368) :LOCATE 1,1,0 :CLS
30 CN=100 :BS=1 :ES=254 :XC=320 :YC=99
40 GOSUB 1520:GOSUB 1570
50 GET(70,83)-(560,145),A%
60 PUT(70,83),A% :PUT(70,83),A%,PRESET
70 M$=INKEY$ :IF M$="" THEN 60
80 IF ASC(M$)<65 OR ASC(M$)>90 THEN 60
90 IF M$="E" THEN CN=C: GOTO 190 :ELSE IF M$="U" AND MD=0 THEN 600
100 IF M$="U" THEN GOSUB 1520 :GOTO 610
110 IF M$="S" THEN M=5 :GOTO 140 : ELSE IF M$="M" THEN M=12 :GOTO 140
120 IF M$="L" THEN M=25 :GOTO 140
130 IF INT(C/2)*2=C THEN M=25 ELSE M=12
140 DD=0 :C1=0 :CLS: FOR H=0 TO 25/M-1: FOR V=0 TO 80/M-1
150 SYMBOL(8*V*M,8*H*M),CHR$( (INT(ES-BS)*RND)+BS),M,M,INT(6*RND)+1
160 NEXT: NEXT :C=C+1 :GOSUB 290
170 GOSUB 440
180 CLS :GOSUB 330
190 CLS:H$="END OF DESIGN "+STR$(C):SYMBOL(319-8*LEN(H$),90),H$,2,2,5
200 LOCATE 22,20 :PRINT "PRESS...<U> FOR MAIN MENU...<E> TO END."
210 GOSUB 440
```



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The OR function in the SYMBOL statement causes colors of superimposed areas to be mixed according to values of the low order color bits at each position. For example, white (color code 7, all three bits on) is produced when any appropriate combination of superimposed colors turn all three color bits on.

Reverse Video Display

After the finished design is displayed for a few seconds, the screen is cleared and the finished design is redisplayed by lines 370 to 380, where the PRESET function causes the colors to be reversed by switching the values of each color bit. The variables XC and YC determine the width and height of the area manipulated by GET and PUT during the doodling routines, and are used with constant coordinates to specify screen locations for GETting and PUTting.

Clearing Space For Large Arrays

DOODLER.BAS allocates sufficient memory for the large array A% by the CLEAR, 922 statement (Line 20). This function sets aside 922 times 16 bytes of array area (14,752 bytes), necessary to enable the GET and PUT functions to handle just over one-quarter of the screen area.

Disk Input And Output

The methods for disk I/O (lines 1140 to 1180 and 1380 to 1430) use the sequential file mode where 28 array elements (56 bytes) are grouped in each 128-byte record of the file. Why 28 elements per record? Because I couldn't find a way to override Sanyo BASIC's limit of 255 characters per program line so that enough A%(I+x) statements could be placed on lines 1160 and 1410 to write 64 elements in each record. (Now, will someone please tell me!)

The sequential disk I/O mode was selected because it is faster (but still takes about two minutes) than the random I/O mode which will cause your drives to stop-and-go during disk operations. Random I/O, though, can be made to use disk space more efficiently.

Entering The Program

Here's some good news! You don't have to key in the entire program before you can benefit from the fruits of your labor. Just set the AUTO line numbering mode, then type in the first

55 lines (lines 10 through 550). Next, change Line 40 to a comment line by inserting a single quote in the first position, originally occupied by the 'G'.

Now save the program, then run it in the demo mode by engaging the SHIFT LOCK and pressing any alphabetic key other than 'E' or 'U'. When satisfied that your labor has not been in vain, press 'E' to end this segment, then key in the remainder of the program. Don't forget to enable execution of the statements in Line 40 by removing the single quote you may have inserted as mentioned above.

Instructions For Use

Upon running the program, a title screen is displayed with messages to shift into uppercase mode (SHIFT LOCK on) and to press certain alphabetic keys. To reduce the possibility of the demo mode being disturbed during its 100-design run, just SHIFT to enter capital letters and leave the keyboard in the lowercase mode. Enter a capital 'S', 'M' or 'L' and the program will start in the demo mode with small, medium or large characters as the basis for creating the designs. If any other capital alphabetic key is pressed, medium and large characters will be used for each alternate design. From this screen, or while the program is designing, pressing 'U' will always branch the program to the main menu, while 'E' will end the program. Otherwise, the program will run for 100 cycles as set by CN (Line 30), which you can change by substituting some other number.

Controls

While running as a demo or in the selected option mode, pressing 'S' saves the design on disk, 'A' abandons the current design and advances to start another, 'R' causes the current design to be redisplayed in both regular and reverse video, 'P' causes the display to pause indefinitely, 'C' causes the routine to continue after being paused, 'E' ends the program, and 'U' displays the main menu as previously stated. All controlling options are also available from the paused condition.

Please note that you will not be prompted for these commands. You can request them at any point, but the commands will not be acknowledged until the appropriate point in the program is reached. This occurs immediately after the fundamental characters are first placed on the screen, after the

design is completed, just after the design is displayed in reverse video and at other selected points. The display is held for a moment immediately after each of these events, which occur just prior to execution of your selected command.

It is suggested that 'P' be used to hold a design while you decide what to do with it. If you press one of the control keys, then change your mind — no problem. Just press the key of your new command before the point is reached where the command is executed. Your screen dump command can be activated at any point in the program.

The Main Menu

From the main menu, choices are available for: (1) instructions, (2) to select options and begin designing and saving designs, (3) to select the drive and the first numerical extension name for the sequentially numbered DOODLE#.xxx files to be saved during the session, (4) to load and display designs already saved on disk, (5) to continue in the demo mode from the main menu, and (6) to end the program.

Selecting Design Options

Design options which are available when you choose Item 2 from the main menu are: number of different designs to create (default is 12 by pressing RETURN); porosity, which is the amount of black background which the design does not fill (default is low, as indicated by the asterisk); the type of characters to be used in the designs (default is lowercase alphabetic); character size (default is large); and 'U' and 'E', which begin the designing process and branch to the ending or main menu routines. Default options can be selected by touching the RETURN key.

Naming Disk Files

You should always select Item 3 from the main menu if you intend to save some of the designs on disk. Be sure to have a formatted diskette in either drive A: or B: which has enough available space to hold at least 20K per design. Some designs require more than 24K. Select the numerical extension name for the first file to be saved such that existing files are not overwritten. All files will be named as DOODLE#.xxx, where "xxx" will be sequential numbers beginning with the number you select from 001 up to 999. If you forget to pre-name your files and attempt to save a design — again, no problem. Your design will be held in memory while the


```

220 CLS :IF C=>CN THEN 230 :ELSE IF MD=0 THEN 90 :ELSE 140
230 CLS :RUN 240
240 CLEAR,,((FRE(0)+4384)/64)
250 END
260 ***
270 *** Get Center Portion of Screen for Finishing Design **
280 ***
290 GET(320-.5*XC,99-.5*YC)-(319+.5*XC,99+.5*YC),A% :RETURN
300 ***
310 *** Create or Re-Display Design on Screen **
320 ***
330 PUT(0,0),A%,OR :PUT(639-XC,199-YC),A%,OR
340 PUT(0,199-YC),A%,OR :PUT(639-XC,0),A%,OR
350 C1=C1+1: IF C1>3 AND DD=0 THEN GOSUB 440 :GOTO 370 : ELSE IF DD>0 THEN GOSU
B 520 :GOTO 370
360 GOSUB 290 :GOTO 330
370 CLS:PUT(0,0),A%,PRESET :PUT(639-XC,199-YC),A%,PRESET
380 PUT(0,199-YC),A%,PRESET: PUT(639-XC,0),A%,PRESET
390 IF DD=0 THEN GOSUB 440 :GOTO 400 :ELSE GOSUB 520 :CLS :DD=0 :GOSUB 1520 :GOT
O 610
400 RETURN
410 ***
420 *** Delay, Then Branch to Routines Upon User Command **
430 ***
440 FOR I=1 TO 2000:NEXT
450 Z$=INKEY$
460 IF Z$="E" THEN CN=C:GOTO 190
470 IF Z$="U" THEN CLS :GOSUB 1520 :GOTO 610

```

SUBMITTING MATERIAL

Contributions to **SOFT SECTOR** are welcome from everyone. We like to run a variety of programs which will be useful/helpful/fun for other Sanyo owners.

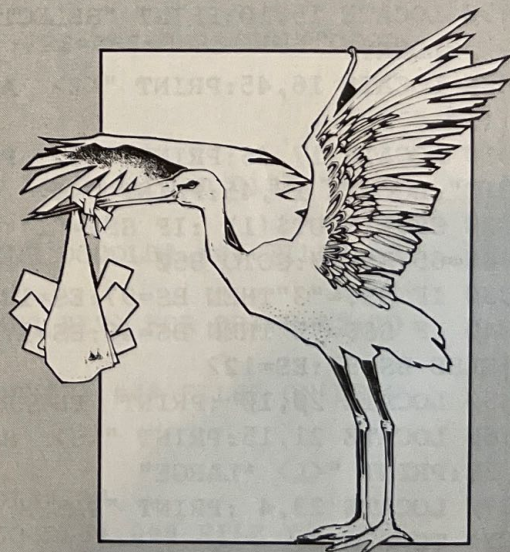
- **FORMAT:** Unless the program accompanying your submission is less than 10 lines, we must have the program itself on disk. We will print out the listing to our specifications. We simply cannot take the time to key in (and debug our typing errors) material which is longer than that. Editorial copy can also be included on disk, using any of the word processors currently available for the Sanyo 550, 555 or 775. However, please also include a double-spaced hard copy of your editorial material and hard copy of your program listing. Please do not send text in all capitals. Use upper- and lowercase. While it is a big help to us in typesetting for you to send your article saved on disk using the ASCII option, it is not mandatory. But we must have, at the very least, a double-spaced hard copy of the article.

- **WHAT TO WRITE:** Anything with a practical application. If it interests you, it will probably interest a lot of others. However, we vastly prefer articles with accompanying programs which can be entered and run. The more unique the idea, the more appeal. We can prepare finished tables, diagrams and schematics from your rough draft if you provide legible copy and full directions. We have a continuing need for short articles with short listings.

We do pay for submissions, based on a number of criteria. Those wishing remuneration should *so state* when making submissions.

For the benefit of those who wish more detailed information on making submissions, please send an SASE to: Submissions Editor, **SOFT SECTOR**, P.O. Box 385, Prospect, KY 40059. We will send you some more comprehensive guidelines.

Please do not submit programs or articles currently submitted to another publication.




```

480 IF Z$="A" THEN 190
490 IF Z$="R" THEN 180
500 IF Z$="S" AND C1>3 THEN GOSUB 1130
510 IF Z$<>"P" THEN 550 ELSE 520
520 Z$=INKEY$
530 IF Z$="R" THEN 180 ELSE IF Z$="A" THEN 190 : ELSE IF Z$="U" THEN CLS :GOSUB
1520 :GOTO 610 :ELSE IF Z$="E" THEN CN=C:GOTO 190 :ELSE IF Z$="S" AND C1>3 THEN
GOSUB 1130
540 IF Z$<>"C" THEN 520
550 RETURN
560 ***
570 *** Write Main Menu Screen, Receive and Branch to Selection **
580 ***
590 GOSUB 1520
600 GOSUB 920
610 LOCATE 8,25 :PRINT " * * M A I N M E N U * *"
620 LOCATE 11,20 :PRINT "<1> INSTRUCTIONS."
630 LOCATE 13,20 :PRINT "<2> CREATE AND SAVE DESIGNS (SELECT OPTIONS)."

```



```

930 ***
940 *** Set Drive and Extension Name For First File to be Saved **
950 ***
960 GOSUB 920 :LOCATE 10,10 :PRINT "ENTER DRIVE WHERE YOUR DOODLE### FILES ARE
    TO BE LOCATED."
970 LOCATE 12,10 :PRINT "TOUCH <B> FOR DRIVE B, OR <ANY OTHER KEY> FOR DRIVE A":
    DR$=INPUT$(1):IF DR$<>"B" THEN DR$="A"
980 GOSUB 920 :LOCATE 10,10 :PRINT "DIRECTORY OF YOUR EXISTING DOODLE### FILES
    ON DRIVE ";DR$
990 PRINT :PRINT :ON ERROR GOTO 1070
1000 IF DR$="B" THEN FILES"B:DOODLE#.*" ELSE FILES"A:DOODLE#.*"
1010 PRINT :PRINT "ENTER 3-DIGIT EXTENSION NAME FOR THE NEXT DOODLE### FILE TO
    BE SAVED,"
1020 INPUT(3) "OR TOUCH <RETURN> FOR 001, OR ENTER <-1> TO EXIT ==> ",FE
1030 IF FE=0 THEN FE=1:GOTO 1040 :ELSE IF FE<-1 THEN 1020 :ELSE IF FE=-1 THEN F
    E=0:GOTO 600
1040 GOSUB 1220
1050 IF Z=1 THEN GOSUB 1140 :CLS :Z=0 :GOSUB 1520
1060 GOTO 600
1070 IF (ERL=1000) AND (ERR=53) THEN 1080 :'* Resume on File Not Found Error *
1080 PRINT "DOODLE### FILES NOT FOUND ON DRIVE ";DR$
1090 PRINT "TOUCH <ANY KEY> TO RESUME." :M$=INPUT$(1) :RESUME 1010
1100 ***
1110 *** Save Design in Memory onto Disk in Selected Drive **
1120 ***
1130 IF FE=0 THEN LOCATE 1,1 :PRINT "CAN NOT SAVE UNTIL YOU ENTER <3> TO SELECT
    NAME OF FILE TO BE USED." :Z=1 :GOTO 600
1140 OPEN "O",#1,FR$
1150 FOR I=0 TO 7340 STEP 28
1160 WRITE #1,A$(I),A$(I+1),A$(I+2),A$(I+3),A$(I+4),A$(I+5),A$(I+6),A$(I+7),A$(I
    +8),A$(I+9),A$(I+10),A$(I+11),A$(I+12),A$(I+13),A$(I+14),A$(I+15),A$(I+16),A$(I+
    17),A$(I+18),A$(I+19),A$(I+20),A$(I+21),A$(I+22),A$(I+23),A$(I+24),A$(I+25),A$(I
    +26),A$(I+27)
1170 LOCATE 1,1 :PRINT "SAVING THIS DESIGN AS ";FR$;" - NOW SAVING RECORD ";LOC(
    1);". PLEASE WAIT."
1180 NEXT I :CLOSE #1 :FE=FE+1 :RETURN
1190 ***
1200 *** Assemble File Name for Design to be Saved on Disk **
1210 ***
1220 IF FE=0 THEN 1230 :ELSE FE$="000"+MID$(STR$(FE),2) :FR$=DR$+CHR$(58)+"DOOD
    LE#."+RIGHT$(FE$,3)
1230 RETURN
1240 ***
1250 *** Select Drive and Extension Name for Design to be Loaded from Disk **
1260 ***
1270 GOSUB 920 :LOCATE 10,10 :PRINT "ENTER DRIVE WHERE YOUR DOODLE### FILES AR
    E LOCATED"
1280 LOCATE 12,10 :PRINT "TOUCH <B> FOR DRIVE B, <ANY OTHER KEY> FOR DRIVE A":DD
    $=INPUT$(1):IF DD$<>"B" THEN DD$="A"
1290 GOSUB 920 :LOCATE 10,15 :PRINT "DIRECTORY OF YOUR DOODLE### FILES ON DRIV
    E ";DD$ :PRINT :PRINT
1300 ON ERROR GOTO 1460
1310 IF DD$="B" THEN FILES"B:DOODLE#.*" ELSE FILES"A:DOODLE#.*"
1320 PRINT :PRINT "ENTER 3-DIGIT EXTENSION NAME FOR THE DOODLE### FILE YOU WAN
    T TO DISPLAY,"
1330 INPUT(3);"OR ENTER <-1> TO EXIT ==> ",FD :IF FD<-1 THEN 1330 : ELSE IF FD
    =-1 THEN 600
1340 ***
1350 *** Assemble File Name, then Load Design File from Disk for Display **

```



```

1360 ***
1370 FE$="000"+MID$(STR$(FD),2) :FD$=DD$+CHR$(58)+"DOODLE#."+RIGHT$(FE$,3)
1380 OPEN "I",#1,FD$
1390 FOR I=0 TO 7340 STEP 28
1400 IF EOF(1) THEN 1440
1410 INPUT #1,A$(I),A$(I+1),A$(I+2),A$(I+3),A$(I+4),A$(I+5),A$(I+6),A$(I+7),A$(I+8),A$(I+9),A$(I+10),A$(I+11),A$(I+12),A$(I+13),A$(I+14),A$(I+15),A$(I+16),A$(I+17),A$(I+18),A$(I+19),A$(I+20),A$(I+21),A$(I+22),A$(I+23),A$(I+24),A$(I+25),A$(I+26),A$(I+27)
1420 LOCATE 23,1 :PRINT "LOADING DESIGN ";FD$;" - NOW LOADING RECORD ";LOC(1);"
OF ";LOF(1)/128;" RECORDS."
1430 NEXT
1440 CLOSE #1 :DD=1 :C1=2 :XC=A$(0) :YC=A$(1)
1450 CLS :GOSUB 330 :M$="" :GOTO 600
1460 IF (ERL=1310) AND (ERR=53) THEN 1470 :'* Resume on File Not Found Error *
1470 PRINT :PRINT "DOODLE### FILES OR SELECTED FILE NOT FOUND ON DRIVE ";DD$ :
RESUME 1480
1480 PRINT "TOUCH <ANY KEY> TO RESUME." :M$=INPUT$(1) :GOSUB 920 :GOTO 620
1490 ***
1500 '** Write Heading for Title and Menu Screens **
1510 ***
1520 A$="DOODLER.BAS By T.S. Harris, Ph.D." :FOR I=1 TO LEN(A$)
1530 SYMBOL(48+(I-1)*16,24),MID$(A$,I,1),2,3,INT(7*RND)+1 :NEXT :RETURN
1540 ***
1550 '** Write Title Screen **
1560 ***
1570 B$="(GENERATES MILLIONS OF COLORFUL PATTERNS FOR FASHIONABLE DESIGNS.)"
1580 C$="ENGAGE UPPER CASE (SHIFT) LOCK."
1590 D$="TOUCH <U> FOR MAIN MENU TO SELECT OPTIONS."
1600 E$="TOUCH <S, M, L OR ANY KEY> TO BEGIN AS DEMO."
1610 F$="TOUCH <E> TO END."
1620 G$="January 22,1985"
1630 SYMBOL(319-4*LEN(B$),55),B$,1,1,2
1640 SYMBOL(319-4*LEN(C$),87),C$,1,1,3
1650 SYMBOL(319-4*LEN(D$),103),D$,1,1,4
1660 SYMBOL(319-4*LEN(E$),119),E$,1,1,5
1670 SYMBOL(319-4*LEN(F$),135),F$,1,1,6
1680 SYMBOL(319-4*LEN(G$),167),G$,1,1,7 :RETURN
1690 ***
1700 '** Write Instruction Screen **
1710 ***
1720 GOSUB 920 :LOCATE 8,25:PRINT "** * I N S T R U C T I O N S * *"
1730 LOCATE 10,7 :PRINT "*** SEE YOUR ` s o f t   s e c t o r ' FOR COMPLETE INST
RUCTIONS."
1740 LOCATE 12,7:PRINT "*** WHILE RUNNING, <PRESS> INDICATED KEY FOR THESE CONTRO
LS."
1750 LOCATE 13,5:PRINT "<P>  PAUSE DISPLAY.":LOCATE 13,40:PRINT "<C>  CONTINUE A
FTER PAUSING."
1760 LOCATE 14,5:PRINT "<R>  REDISPLAY CURRENT DESIGN.":LOCATE 14,40:PRINT "<A>
ABANDON, ADVANCE TO NEXT DESIGN.":LOCATE 15,5:PRINT "<S>  SAVE DESIGN ON DISK."
:LOCATE 15,40 :PRINT "<E>  TO END." :LOCATE 16,5 :PRINT "<U>  FOR MAIN MENU."
1770 LOCATE 16,40 :PRINT "[?]  Your Screen Dump Command." :LOCATE 18,7:PRINT "***
<A>, <R>, <S>, <U>, <E> & <Screen Dump Commands>" :LOCATE 19,11 :PRINT "ARE ALS
O AVAILABLE WHILE PAUSED."
1780 LOCATE 21,7:PRINT "*** USE UPPER CASE LETTERS ONLY."
1790 LOCATE 23,7:PRINT "*** TOUCH ANY KEY TO RETURN TO MAIN MENU."
1800 M$=INPUT$(1) :IF M$="" THEN 1800
1810 GOTO 600
1820 '** End of Listing **

```


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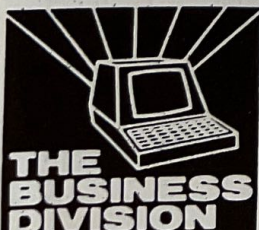
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Continued from page 6

engineer explained that the problem was caused by the Sanyo sending a false data strobe signal on Pin 1 to the printer. This false signal was being caused by a discharge of a build-up on the RF filter, which is in the strobe circuit.

To correct the problem, the RF filter must be removed and the circuit closed by soldering a shunt across the two main points where the RF filter was attached. There is a third lead which is ground that can be ignored.

The RF filter is easily found. It is the first component in from the printer port connection on Pin 1. It is about one inch in from the edge of the PC board. You will see a group of RF filters; each pin has its own.

The removal worked and the problem did not recur. I was told this problem is not unique to the SCM printer. Other printers may experience the same problem.

Keep up the good work with the publication.

Richard Kuzman
Springfield, VA

REVIEWING REVIEWS

Editor:

I am angry with the review of Olympic Educational Software's *Spelling Bee*. As a father of three, I can tell you that it is tough enough to find good educational software without you guys slamming an effective product. I admit I had doubts about the "look/spell" format, but this product has proved itself to me. When the kids use it, they learn typing, computer functions and spelling. When they forget to practice their weekly spelling words with *Spelling Bee* (never more than 30 words, far less than the reviewer wanted), their grades drop. When they use *Spelling Bee*, they get them all right. The lack of fancy graphics or having to use the LOCK key does not keep this from being an effective product. In the future please have educational programs reviewed by someone who has children.

S.J. Hall
Moscow, ID

Editor:

To the review of *Home Expense Manager*, I feel I must respond. I have always enjoyed reading your software reviews. They always seemed to be unbiased and useful to both the reader and the author.

The reviewer in this case seemed to use his review as his soapbox for stating his opinions on proper software design.

The reviewer states, "every time you do anything you get a 'Gathering File Statistics' message." This statement is, in itself, outrageous. Besides being untrue, the reviewer fails to clarify what file statistics the program is gathering.

The manual is cited as being "13 pages from a poor copy machine." At Pritchard Software, we try to sell quality software at an affordable price. Documentation is an area where we can cut costs for the consumer. How many of us have manuals

with expensive covers which are now collecting dust on the bookshelf? We feel that after using *Home Expense Manager* a few times, the manual will no longer be needed. The cost of expensive packaging is passed on to the consumer by being included in the price of the software. Much to our dismay, there was no mention at all of the completeness and accuracy of the manual.

It almost seems that the unattractiveness of the manual led the reviewer to not even bother to use it. The following are quotations from the manual that are discussed in the review:

- 1) "Try 'A' for adding (adding what?)." This is discussed on Page 2.
- 2) "It should provide sample data." This is discussed on pages 8 through 9.
- 3) "Hope that function 'M' will let me see what data there already is." This is discussed on Page 2.
- 4) "What is least harmful (A)dd, (U)pdate, (D)elete, (P)rint." This is on pages 2 through 5.

The reviewer states there is a need for help screens. However, in the next paragraph, the reviewer complains that the screen is too wordy.

The review states that sample accounts chosen had to be changed to type 'A', yet not once did the review state what any of the six payment types are. For that matter, it did not mention any of the information contained in the expense file.

The only mention of the two reports that are generated is that they do not advance to the top of the form. Nowhere does it mention any of the pertinent information contained on these reports.

We at Pritchard Software think *Home Expense Manager* is a quality home budgeting package at an affordable price. We have sacrificed attractiveness for affordability and speed for thoroughness.

Dennis Pritchard
Pritchard Software
Grand Blanc, MI

Editor:

In regards to the review of *The Disk Calculator*, the reviewer grossly exaggerated the limitations of the product and was remiss in mentioning some of its more prominent features. Let me first comment on the limitations which the reviewer cited:

- 1) **The Disk Calculator is a stand-alone program that does not transfer results to other programs.** True, our program was not designed as a simple pop-up calculator that resides in memory. It was designed by experienced accounting/programming professionals to perform heavy-duty accounting work. Resident calculator programs are great if you need to transfer results but most are limited in their features and the fact that they take up memory may cause serious problems to users with limited memory. A large program that previously loaded in memory may not load once a resident

Continued on page 92



Software review

A Comparative Review Of *Lotus 1-2-3* and *SuperCalc*³

With the coming of the Video RAM Board and the new MBC-775, Sanyo users now have access to many of those wonderful "integrated" software packages. *Lotus 1-2-3* and Sorcim's *SuperCalc*³ (Version II) are finally able to run on your favorite computer. What follows is a review of these two packages as run on an MBC-775 or on MBC-555 with the Video RAM Board installed.

This review is going to be a bit different from most others you've seen in these pages. Instead of focusing on a single software package, we're going to put two very similar new packages in the ring and let them do battle. We'll present the facts, one by one, and let you determine the winner.

Documentation

This is the first and most important aspect of a program that a new user has to deal with. A software package can be the best thing since NutraSweet, but if you can't figure out how to make it work, it's worth about the price of a blank disk.

Fortunately, both Lotus and Sorcim have done an excellent job on their user support materials. Both have manuals that are pleasing to the eye and very easy to follow for the first-time user. Beyond the tutorial sections of the manuals are reference sections which are invaluable once you've begun regular use of the programs.

Sorcim goes one step beyond Lotus, on paper that is, by providing a 20-page "10 Minutes to SuperCalc" book that really helps in getting acquainted with the program. It tells you everything you need to know to get going, from starting the program to printing simple graphs. It doesn't dwell on a single subject, but moves quickly along taking you through examples of using the program. The more intensive training is reserved for the nine-lesson tutorial in the program manual.

Lotus' claim to user friendliness comes in the form of a comprehensive on-disk tutorial that covers almost every aspect of the program. A newcomer can pop in the *Lotus 1-2-3* Tutorial Disk and be on his way to becoming the next *1-2-3* expert. The screen comes to life with typical *1-2-3* screens. Much like driver training, the computer encourages the "student" to enter commands and values while never letting him or her make a wrong turn.

Both programs come with quick reference cards and Lotus includes function key labels. Indexes, so often omitted from computer documentation, are included with both manuals.

Built-in documentation is also provided in both through the use of "help" screens that give you assistance with particular aspects of the programs while you're actually using the program.

Spreadsheet

Lotus 1-2-3 and *SuperCalc*³ are both based on electronic spreadsheets; that is, the screen is divided into rows and columns containing labels, numbers and formulas. This concept, pioneered by the *VisiCalc* folks, has become extremely popular because of its endless variety of applications. You can do almost everything from checkbook registers to profit and loss statements with a single spreadsheet program.

Lotus clearly wins the spreadsheet contest from a standpoint of size. A *Lotus 1-2-3* spreadsheet can have a maximum of 256 columns and 2,048 rows (depending upon system memory) for a total of 524,288 individual cells which may contain numbers, labels and formulas. *SuperCalc*³, on the other hand, more than doubles Lotus' size by giving you up to 127 rows and 9,999 columns for a total of 1,269,873 cells. Of course, you cannot have that much memory.

Both *1-2-3* and *SuperCalc*³ include the standard math functions found in most spreadsheet programs, to average, sum, count, do algebraic calculations, and so on. They go beyond the norm, though, by providing date calculations and financial calculations such as rate of return and loan payments. These are functions that have been on many spreadsheet users' "wish list" for a long time.

Entering data and formulas into both spreadsheets is very straightforward and simple. *1-2-3* may be a bit easier at first because of extensive prompting done throughout this process. *SuperCalc*³, though, includes a timesaving feature that automatically moves the cursor to the next cell as you're entering data. It "guesses" where you'll be moving next by remembering the direction of your last move. This makes entering long lists of numbers more convenient than *1-2-3*'s (and most other's) approach of "enter data, press ENTER, press arrow key."

Both programs allow you to move the point of the cursor to a cell when entering a formula involving that particular cell as a shortcut to entering the cell address. *SuperCalc*³ requires that you press ESC to be able to move the cursor while entering a formula, *1-2-3* requires no such awkward keystroke.

The most talked about feature of *1-2-3* and *SuperCalc*³ is their ability to turn confusing rows and columns of numbers into meaningful charts and graphs.

Both programs will produce pie, bar, stacked-bar, line and X-Y graphs. *SuperCalc*³ will also display hi-lo and area graphs. All the graphs are displayed in color if you have a color monitor. That is, all the graphs except the pie chart on *Lotus 1-2-3*. Curiously, *1-2-3* cannot display a pie chart in color or even with any shading pattern — it just draws the slices. I found this very distressing, since pie charts can often take advantage of color for clarity, more so than other types of graphs.

Defining the data for the graph, the graph type and the headings was easy with both programs; however, I found *1-2-3* to be a bit less complicated.

Displaying a graph on the screen is wonderful for the person sitting at the computer, but if the chart is to be filed for future reference or included in a report, as is so

often the case, you'll need to get it on paper.

Lotus 1-2-3 supports most popular IBM compatible printers including those from Epson, Hewlett-Packard, Toshiba, C.Itoh and Quadram (Canon). Printer drivers are supplied for each different printer.

SuperCalc³ has the added advantage of being able to select your printer/plotter type while you're running the program — making it easy to go from a letter-quality printer for text, to a plotter for graphing. Sorcim has included drivers for most popular printers and some that I've never even heard of. Sorcim has even included *SideWays*, a program which allows you to print extra-wide spreadsheets vertically on some printers.

Lotus 1-2-3 requires that you save the graph and use a separate utility program to print it. However, it allows you to select several graphs to print unattended.

SuperCalc³ lets you print a graph as it's displayed on the screen by pressing PF9. In most cases, this is much handier than the Lotus approach.

Database Functions

Lotus 1-2-3 and *SuperCalc³* both provide rudimentary database functions. Since a relational database can be thought of as a table of records, each having columns or fields, it adapts very well to a spreadsheet environment. While the database features of these two programs are not nearly as extensive as dedicated database systems such as *dBASE III*, they are generally easier to understand because the data is viewed on the screen much as if it were in a ledger book — you can see more of the information at once. Another limitation with spreadsheet databases is that all the data must be in the computer's memory at once as opposed to on the disk. This limits the number of records.

The most basic database function available to *1-2-3* and *SuperCalc³* users is the ability to sort the rows (records) on the basis of one or two columns (fields). Both programs allow you to sort on a "primary" and a "secondary" key.

A very powerful function of the data handling capabilities is the ability to select data from a table by specifying a criterion and having the selected records displayed elsewhere on the spreadsheet. If, for example, you had your accounts receivable list in the spreadsheet, you extract a list of those who are over their credit limit.

The data handling aspects of these programs were the most difficult to understand and learn. In general, I found the database features of *Lotus 1-2-3* slightly easier to grasp.

However, there was no single subject that I found completely incomprehensible in either program. The manual writers for Sorcim and Lotus must have expected this to be a sticky point and, consequently, took a lot of time explaining these features.

Ease of Use

I found both *Lotus 1-2-3* and *SuperCalc³* to be very easy to learn and use. And "use" is something that you'll do often with either one of these programs once they take their place next to your computer — they are habit forming! The manuals and tutorial materials that come with both were a real joy to use — for learning and for reference.

Lotus 1-2-3 provides an "Access System" that gives the user access to all of the Lotus utilities, allowing you to print graphs, translate non-*1-2-3* files, etc. It also gives you access to a very nice user-interface to MS-DOS that guides you along during file maintenance chores normally available only through MS-DOS commands. With it, you can get a directory (sorted, if you like), copy files, rename files and even archive hard disk files to floppy disk. If one plans to use *Lotus 1-2-3* exclusively (many do), they never have to see an MS-DOS prompt.

This is fantastic for clerical people who only do one thing with the computer and for those who don't have the inclination or the time to learn MS-DOS.

Lotus 1-2-3 comes with six (count 'em) disks. The "System Disk" and "System Disk Backup" have the *1-2-3* spreadsheet program on them. "Print-Graph" is used when you're printing graphs on a printer or plotter. The "Utility" disk has the MS-DOS user interface. A disk labeled "Tutorial" contains the extensive stand-alone tutorial program.

The *SuperCalc³* system is on two non-copyprotected disks — one system disk and a utility disk with sample files and the *SideWays* program.

One thing that greatly reduces the convenience of using *Lotus 1-2-3* is that the System Disk cannot be backed up and must be in the floppy drive each time you use *1-2-3*, even if you have a hard disk. A hard disk certainly makes *1-2-3* faster and more convenient. Those who bought a hard disk drive to get away from shuffling disks (as I did), will be aggravated to have to play the floppy game again. A backup system disk is provided to keep you running if something happens to the main system disk while you wait for a replacement from Lotus.

SuperCalc³, being on a non-protected disk, is much more convenient to handle. The original disk can be copied directly to a hard or floppy disk and put away for safe keeping.

Conclusion

There is no conclusion. Both programs have features that make them special. Think about what you want to do with the program and what you may want to do in the future. Will it handle it? Will the program support your printer or the printer that you want to purchase? Does Lotus' copy protection system cause problems for you? Always try before you buy. The decision is yours.

(*Lotus 1-2-3*, Lotus Development Corp., 161 First Street, Cambridge, MA 02142, 617-492-7171, \$495; *SuperCalc³*, Sorcim/IUS Micro Software, 2195 Fortune Drive, San Jose, CA 95131, 408-942-1727, \$395)

— Danny Humphress

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Home Expense Manager — Money Management At Home On The Sanyo

This is a review of the *Home Expense Manager* by Pritchard Software. Any program that is written to be used in a home or office must be interactive in nature. The user of the program is generally a part-time user and must be assumed to be thinking of other things and in a hurry. How do you make a program both powerful and easy to use? That is the problem the software author must solve and he has few tools to work with. There are lots of books on how to write compilers but very few on how to write applications. So, applications are written with art and guesswork.

The reviewer's job has several facets. One must use the product to see how it performs as it is. One must also be a critic and suggest how the product could be made better. It is hard for a self-publishing software author to get objective feedback on his product. There are no software editors to help. Customers, particularly non-paying customers, provide little feedback. Those paying customers who do not like the product generally trash it and you hear no more from them. So it falls on the reviewer to try to provide feedback to the author and to push for improvement in the process.

In the long run, the marketplace will let the best applications survive. In the meantime, let us all learn how to do interactive applications better.

The particular application that we are looking at here is that of household budgeting. Some households do budgets. (I know one that does, anyhow.) A nice, cheap little budget program would be welcome to Sanyo owners who do not have an accounting program. The program that I am reviewing here does not meet that need.

The first impression of *Home Expense Manager* is not good. The manual is 13 pages made from a poor copy machine. The pages are stapled together. There are screen dumps to illustrate the five screens. I would prefer that the author use the space to explain theory and background rather than repeat what can be seen on the computer screen.

When you start the program, which is EXPENSES.EXE on the disk, you get the message, "Gathering file statistics. Please stand by . . ." You will see that message a lot in this program. When it has done whatever it is doing gathering file statistics, screen one is presented. Screen one is a menu that gives three choices:

- P = Perform Expense Projection
- M = Maintain Expense File
- E = End.

The selection code is entered above the menu. That is, it says "Enter Selection Code," then presents the menu.

I pick the 'M' choice since I have no knowledge of what data is already there and I hope this will let me see it. The menu stays, but another line is added offering more

choices: (A)dd, (U)pdate, (D)elete or (P)rint. The cursor is positioned after that trapped in a menu with no way out. What is the least harmful alternative? Try 'P.' The printer is printing. One line? It prints "Expense File Profile" in the upper left-hand corner and quits. Well, no data then. So, try 'A' for adding. (What are we adding?)

Adding data gives you a very complicated, wordy screen. The cursor jumps across from left to right, then down and back across. This screen does duty for adding data, updating data, deleting data and the expense file profile print. The data to be added is simply budget accounts. There is no sample set of data to help you see what can be entered. (There is a sample key listing in the manual, but that simply gives the key and the name of the account.)

When you go through the process of entering an account, select 'M,' select 'A,' and enter the account. You will run into "Julian" dates. As far as I can figure, the program permits you to specify the date that, for example, rent is due. But the program author(s) could not find a way to do this with dates, so there is provided a chart that gives you the day of the year from the date. No program, — no matter how cheap — should make you do table look-ups or calculations in your head. That is what computers are good at!

Given that you have entered an account, you get that gathering statistics message, a long wait, and back to the main menu. Every time you do anything, you get that gathering statistics message, a long wait and back to the main menu.

With sample data in place, option 'P' can be tried. It took several tries. The sample accounts I had chosen were the wrong type for expense projections, so I had to edit them to make them type 'A.' Edit requires selecting 'M,' then selecting 'U,' then waiting for the directory to print, then waiting a long time to choose the key (number) of the account to edit. Generally, when you are entering or editing data, there will be more than one item. This program needs to allow that in order to become usable. As it is, the whole process is too slow.

Choice 'P' is starting to work better. I gather it is supposed to list the accounts and the amount received or payed during the time period chosen. It finishes when you do not override its choice of time period. If you try to override, you get a divide by zero crash, and back to MS-DOS. If you try 'P' with the printer off, you crash. If you run it with no data, you crash.

Neither of the two printed reports eject the paper after printing. The printing is casually formatted. For example, the numbers do not line up on the "expense file profile," and the printed reports cannot have the user's name on them.

This program needs to be re-done. It's not finished yet. More attention to user interaction should be given. The program should allow faster entry and editing of budget accounts, it should be better at the date handling, it should pay more attention to function than to form, and it should provide sample data. Further, it should provide some on-line help.

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Disk Calculator — A Software Calculator Program

If you want to turn your \$1,500 computer and printer into an \$18 printing calculator, then *Disk Calculator* is for you! It comes on a single-sided, 160K disk as two programs, DC.EXE and COBRUN.EXE, apparently a compiled COBOL program and its run-time module. When run, the computer can add, subtract, multiply, divide, find an exponent or percent, the future value of a present sum or the present value of a future sum. Results can be sent to a printer, along with a comment and date. Accumulation of separate results into a grand total is an option, with grand total and subtotal printable. The printed output looks like the printing of my 5-year-old Sears desk calculator.

The CRT display has five lines of options at the top (item number, date, accumulation, printer and number of decimal places), then eight lines for functions (add/subtract, percent, etc.), and at the bottom a short help table.

The *Disk Calculator* comes with a 28-page manual which briefly explains the functions and gives examples. I found one major bug and some major limitations.

The *Disk Calculator* is a stand-alone program. Loaded

from DOS, it cannot be used with another program. After exiting from *Disk Calculator* it must be reloaded to be reused. Further, there is no provision for saving calculations and entering them directly into a resident program such as *DataStar*.

Upon loading DC.EXE, I was surprised by the option for the number of decimal places. With two decimal places as default, the user sets the status line at 0, 2, 4 or 6. Only these decimal places are allowed; floating decimals are not possible. (At this point the reader will be able to understand the use of the program more easily if he sits in front of the computer.) For addition, the cursor is set to the add/subtract line and after each number, ENTER is pressed. Subtraction is done by adding negative numbers, or by using the PF6 key. The *Disk Calculator* is line oriented; use the PF10 to move down to the multiply or divide line (PF9 is up). The last result moves down with the cursor (sometimes — see below) to allow chaining calculations. Thus 2, ENTER, 2, ENTER, PF10, ENTER, 6, ENTER results in 24.

When accumulating results for multiplication, division, exponentiation, finding percentages, or future or present value PF8 (= / +) is used in lieu of ENTER. The result is displayed and added to the accumulating result (PF6 is the = / - key; it subtracts the result from the accumulating result. To see the accumulated result, press PF3 for subtotal or PF5 for grand total; calling the grand total empties the accumulator.

The percent function can calculate the discount price directly; for example, $100 - (.2 \times 100) = 80$ is obtained by 100, ENTER, 20, PF6, (PF8 works analogously for percent

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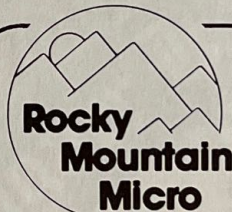
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increase). The exponent function takes any number and raises it to a positive integer *only*. Thus 10 to the $\frac{1}{2}$ power (square root) cannot be calculated, nor can negative powers such as 12 to the minus three. This makes the exponent function very limited.

Two business functions are included, the future value of a present sum (FV), and the present value of a future sum (PV). FV allows one to choose either a single deposit or regular deposits occurring at the same frequency as the compounding. (PV allows the same option, so its need is not clear to me.) With regular deposits, FV requires that deposits and compounding occur at the same frequency; for example, yearly deposits and quarterly compounding can't work. This method is commonly used in software, but the user must be aware of the problems. An error message in *Disk Calculator* keeps one from making this error. Comparing FV to a public domain future value program, the results were \$12,724.40 and \$12,724.30 respectively. This is not a significant difference, possibly due to a rounding difference or to choice of length of year, 364 days versus 360 days.

I've hinted that the program was *not* bug free. The foremost problem is a bug in the chaining mechanism. Chaining a multiplication after an addition puts the sum in position as the multiplicand. Thus (2+2)x6 results in 24 via 2, ENTER, 2, ENTER, PF10, ENTER, 6, ENTER. However, multiple chaining results are not correct. Consider, for example ((2+3)x3+4)x6=114. The sequence 2, ENTER, 3, ENTER, PF10, ENTER, 3, ENTER, PF9, ENTER, 4, ENTER, PF10, ENTER, 6, ENTER results in 204! For the correct answer, the add/subtract line must be cleared after PF9 and the last answer recalled (PF1 and PF4 inserted). There is no hint of this problem in the manual and since *Disk Calculator* is a compiled program, there is no easy way of fixing the program.

The *Disk Calculator* is not easy to use on the MBC-550, since the cursor control keys are the *shifted* function keys. Not using the arithmetic function keys (+, -, *, / and =) wastes motion and slows down use. My hands were constantly moving away from the numeric pad. The problem is compounded when using accumulation or even simple subtraction — the function keys are used for summation and subtraction. Similarly, the line oriented nature of the program slows down use.

In my opinion, *Disk Calculator* has very limited use, at best. It is inflexible, clumsy and contains bugs. Its lack of flexibility is seen in the limited decimal point options

and in the lack of a fractional or negative exponent calculation. Missing also, and of major use to the programmer, are hexadecimal conversions. The stand-alone nature of the program further limits it. Clumsy to use on a MBC-550, it contains a major bug that makes it even clumsier, as well as error prone. Although the percentage functions are nice, any desk or pocket calculator with a second memory (usually labelled M+, M-, etc.) can be used in the same manner with no more trouble! For a teacher of COBOL, designing such a desk calculator program might be a good beginners exercise; this effort might get a B-. This program does little to make life easier for the businessman, the programmer or the hobbyist.

To judge the value of this program I checked the prices of some business calculators in a local discount store. For less than its \$29 price, two business pocket calculators were available, having all the functions of *Disk Calculator*. Small printing hand and desk calculators were available for less than \$30 (without exponentiation, FV and PV). Finally, the business functions, FV and PV, are available in Sanyo BASIC in a public domain package with a large number of other useful financial routines.

(RJL Systems, 106 New Haven Ave., Milford, CT 06460, 203-878-0376, \$29)

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TOP/Power Manager — A Powerful Tool That's Tops

TOP/Power Manager is a single file database management system that is user friendly, multi-functional, versatile and very powerful. It provides for database generation, simple vertical or horizontal reports, customized reports, customized letters and mailing labels. *TOP/Power Manager* was designed with the user in mind. It allows the user to build simple or complex structures with minimal effort. This in turn allows the end user to utilize time more efficiently making business decisions, and less time making database decisions.

Now that I have your interest, let's investigate what it is you get besides two floppy disks and a thorough users' guide. To begin with, *TOP/Power Manager* uses random access files. Each database can have 150 fields with a maximum of 50 characters per field. The user, when defining a database, determines the field length, type, any defaults required and if any fields are "rapid screen." The length can be from one to 50 characters per field. Field type is defined as one of four categories:

- 1) Alphanumeric — any printable characters.
- 2) Numeric — any real number up to 13 significant digits.
- 3) Money — a numeric field which automatically sets two digits to the right of the decimal point.
- 4) Date — stored in the format MM/DD/CCYY or 04/01/1985. The century is added automatically.

Defaults are defined as one of three categories:

- 1) System — For Alphanumeric characters it is null. Numeric and money is zero and the system date is the current date.
- 2) Last Used — Uses the last input data entered for that particular field.
- 3) User Defined — Uses what the user has defined for a particular field.

Rapid Screen Fields are defined by the user for the purpose of inquiring on key information without having to retrieve the entire record. A maximum of 18 fields per database can be defined as Rapid Screen Fields. The field definition provides the database with the information required for self-editing and prevents erroneous data from being entered.

The entire system is menu driven and defined by the following six categories: Define Structure, Maintenance, Select and Sort, Output, External Interface, and Utilities. Define Structure is the dictionary tool that allows you to define a new database structure from scratch or build one from an existing structure. Maintenance is the function that provides data manipulation. It allows data to be added to, inquired about, marked for deletion, activity changed, and searched with specified parameters by field.

The Select and Sort routine provides for the selection of records based on a defined set of conditions. The definition is provided via a script language called TOP English. Any field, whole or partial, can be sorted or selected by this option. Another nice feature of this routine is that it does not copy the database to sort a file. Instead, it selects the records, puts them in their proper sequence, and builds an index file that points to the correct record on the database.

The Output option consists of four categories: Label Writer, Catalog Writer, Report Writer, and Report Maintenance. Label Writer provides the ability to print labels on standard $1\frac{5}{16}$ -inch tall labels with up to five lines per label and a maximum of four across. Catalog Writer is used to print vertical reports. Report Writer is used to print horizontal reports. Report Maintenance is used to define the reports used from the previous output writers or to define customized reports. A "dot language" provides the user with the capability of producing simple or complex reports.

External Interface provides the ability, via TOP Transfer, to transfer data from *FreeForm* filer into the database. *FreeForm* filer is another TOP software package, reviewed in the December issue of *SOFT SECTOR*, (Page 56).

The Utilities allow for a database to be copied and provide a directory listing of all established databases.

Two key points about *TOP/Power Manager* are TOP



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English and Report Processor Commands. TOP English is script used to define action on a file to be used for sorting or report generation. It is simple but powerful. In short, it provides the capability to define any field as a sort field and is very exact when choosing records. For example, one sort statement could select all records in a particular ZIP code with purchases less than \$500 within the last six months and sort the file alphabetically based on the business name. From the selection made using TOP English, a file is created to produce reports, letters or labels. It provides the capability to access the database in any sequence you desire.

The dot language (Report Processor Commands) is what allows the user to build simple or complex reports. It not only allows for customized reports, but also defines how the database is to be accessed by using the entire database or a file defined in the Select/Sort routine using TOP English. Dot language is simple to use and it provides the flexibility required for report customization. It also provides for math calculations between fields and produces totals and column averages among other things. The use of both these languages is defined very clearly in the users' guide.

The documentation that comes with the system is complete. It consists of a one-inch binder with all the information the end user should ever require. The manual is divided into sections for quick reference. It is set up in a manner that the user only has to read what is required, and not the entire manual, before getting started. To help the user get started, the manual also contains a chapter on database theory, one sample database, one tutorial and two exercises using dot language.

Now that you know what you get, let's talk about how it works. To begin with, the entire system is menu driven. Each step within an application consists of a prompt box and defaults. This makes it very difficult to make mistakes or to forget something. The system continually guides you through each step, it catches all errors on entry and asks for corrections before proceeding to the next step. The errors that appear on the screen are self-explanatory. Also the errors can be found in the specific chapters of the manual or in the appendix.

Working with the system, I decided to review the sample database, work through the tutorial and do the two exercises. The purpose of the sample database is to show the user early on the powerful capabilities of this system.

The sample database consists of nine fields and 25 records. It references companies, their locations, contacts, phone numbers, dates of last orders and amounts sold. The first step is to view the database structure. This gives you a feel for how the database is designed. The second step is to view the actual data. When doing this I paged forward, backward, entered a specific record number, and searched the file based on data residing in a specific field. The third step is to print pre-defined form letters. The form letter is already written with a dot language program. When it is executed, it prints one letter for each customer on the database. I did not do this step immediately because I really did not care to print 25 letters. Instead I went on to the next step being the Select/Sort step, and then completed the tutorial. Being more knowledgeable after the tutorial, I got daring and decided to modify the program in the sample to print the letters based on a file I created in the Select/Sort step. I modified the program using *WordStar*. It took one instruction as follows:

From: .dbsample

To: .dbsample via mysort.wtg

From is saying to use the information on the database sample to print this letter. To is saying to use the information on the database sample, but only use the records designated by the file *mysort.wtg*. I then created my Select/Sort file using the Select/Sort function and TOP English. The script for TOP English is, using *dbsample*; if &"Amount Of Last Order" < \$500.00 then SORT &Name. This merely states that if the last order was less than \$500, then sort that record in NAME (customer) sequence. I then printed the pre-defined form letter from the sample database and only printed two letters.

The tutorial is designed as a step-by-step instructional guide to walk the user through the options of *TOP/Power Manager*. It instructs you on how to build (define) a database structure, add data to the database, build a sorted file using TOP English to define the selection criteria, and finally an exercise on printing labels. There is also a *FreeForm* transfer step in the tutorial. I did not cover this step.

The two exercises using the dot language provide an overview of how to use the language. The first exercise is the program used to produce the letter for the sample database. The second exercise becomes more sophisticated by defining an invoice statement using the information contained in the sample database.

After a short time of working with the system, going through the exercises and using the manual, it became quite evident that *TOP/Power Manager* is truly a powerful and easy-to-use system.

While reviewing *TOP/Power Manager*, I was contacted by Mr. Howard English, V.P. Marketing. He called to inform me of some changes made to the software and also passed on some points of interest:

- A) Some practical applications of this system from existing users are: tracking past due accounts, accounts payable, sales analysis, calculating sales commission, inventory, maintaining insurance, personnel and credit records, membership mailing lists, client profile reports, telemarketing and survey analysis and tracking stock portfolios.
- B) An enhancement package for *TOP/Power Manager*, called *TOP/Problem Solver*, is being developed for release later this year. This package will contain templates for aged accounts receivable and payroll, inventory, purchase orders, sales commissions, and a format for tracking stock portfolios and business letters.
- C) Software support is provided through a toll free number: 1-800-255-1382, Ext. 47.
- D) The program is available on single- or double-sided disks.

To summarize, I find *TOP/Power Manager* to be a system that is easy to learn and requires minimal effort. The Sorting/Selecting and Report Generating capabilities are excellent. It fits the needs for several business applications and personal use. *TOP/Power Manager* is a database management system designed to meet the end user's needs. But most of all, it is *uncomplicated*.

(TOP Software, 2431 East Douglas, Wichita, KS 67211, 316-684-5281, introductory offer, \$199.95)

— John E. Schlosser

PREP — The Personal Revenue Enhancer Program

The *Personal Revenue Enhancer Program (PREP)* by U.S. Digital Corporation, is a personal expense ledger. Yes, that means it will balance your checkbook, segregate expenses into categories you have set up, and print a well-rounded set of reports as you request. In order to get started, you'll need a formatted disk with the operating system and BASIC. For dual drive owners it's easy to copy all files from the master disk to a working copy using the *.* command. However, single drive owners will need to transfer all 11 files using SCOPY.EXE. Now that you have a working copy and have stored the original master disk in a safe place, it's time to get started.

At the DOS prompt, enter PREP followed by RETURN. A batch file will load BASIC and display the menu. On the screen, a picture of a check and a date will appear. This date will either be the last time you used the program or the system date if this is the first time the program has been used. Enter the current date and press RETURN. The screen will now clear and the main program menu will appear as follows:

Function Key One

Checkbook Entries & Deposits
Balance Checkbook
Correct Errors in Entries

Function Key Two

Print Yearly Totals
Print Monthly Reports
Print Expense ID Totals

Function Key Three

Enter Beginning Balance
Add New Expense Categories
Delete a Year

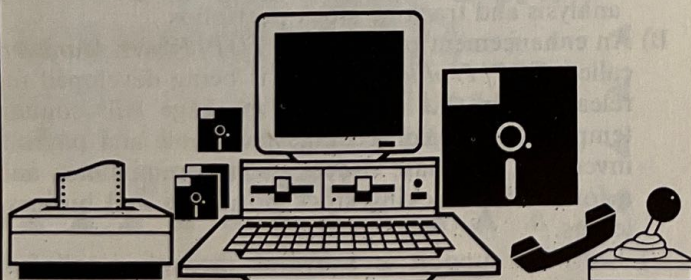
Function Key Four

Quit

Initially, PF3 is required to allow establishment of your personalized expense categories. Here, as with other branches from the main menu, a new menu appears to illustrate the various options. The manual will lead you through what is required to set up your expense categories, represented for entry purposes as two alpha characters. Having established all foreseeable categories, you're over the hump and ready to get down to serious business. *PREP* will handle all your cash flow transactions to include checks, automatic bank teller, credit cards, service charges, cash outlay, various income types, etc.

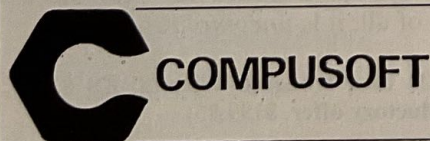
Just in case there is any kind of trouble, or you change your mind about that last key pressed, a panic button has been provided. At virtually any point in the program you can press the ESCAPE key and safely return to the previous selections. I found this to be a great confidence builder which allowed me to proceed with a secure feeling. The inevitable data entry error has also been provided for. As a matter of fact, the flexibility of the program is to be commended. There is nothing I found which could not

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be altered, added or deleted as needed.

A second noteworthy point is the manual. The documentation comes in a three-ring, hard-back binder. It is written in such a manner that a novice or advanced user can follow the instructions without difficulty. The presentation is well done and exhibits a welcomed sense of humor in reading material which is normally very dry.

As an aid to budgeting, tax preparation and checkbook maintenance, this program performs admirably. Here the key word is aid. My complaint with U.S. Digital is not with their program, but rather their marketing approach. The manual and advertisements frequently include phrases such as "beat the taxman," "pays for itself many times over," and "press one button for all the numbers you need to fill out that 1040." I find these claims a bit much to swallow. Try taking only these fancy printouts to an IRS audit or your tax consultant and see what his reaction is. Better keep that shoebox full of receipts handy because you're apt to need it.

Save time filling out tax forms? Probably, but what about all those sessions with your trusty Sanyo entering this information. And finally, in order to "pay for itself several times over," (let's settle for twice over), you will need to find \$450 in deductions which would have been overlooked without *PREP*. Although this is possible, it's not very probable.

In summary, *PREP*'s menu-driven format makes it easy to use and accomplish what is expected of this type of program, providing assistance in organizing one's personal finances. The manual is the best I've seen for quite some

time and the \$59.95 price tag is not unreasonable. My only caution is not to buy this package with the anticipation that it will do your taxes and save you money. Only you have that responsibility and control.

(U.S. Digital Corporation, 5687-H S.E. International Way,
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— Bob MacDonald

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Soft Spool — Having Your Cake And Eating It, Too

How many times, as you have been waiting for a long file to print out, have you wished for a printer spooler so that you could be using the computer while the printer is doing its thing? You may even have taken the next step and priced some of the hardware spoolers and then like me, been turned off by the price. The least expensive, bare bones hardware spooler I could find with just 8K of memory was \$129.95 plus tax and shipping. This was more than I thought I wanted to pay for a little added convenience.

Then MichTron came to the rescue with a neat little program they call *Soft Spool*. It does what a hardware spooler would do for you at one-quarter of the price. *Soft Spool* is very simple to use and does what it is supposed to do every time, all the time. *Soft Spool* is a 698K .COM file that you load when you boot up the system and it will reside in memory, invisible, until you re-boot the system or turn the system off.

To load *Soft Spool*, all you have to do is type in the drive designator where the SPOOL.COM file is stored, the

command SPOOL followed by a slash, and a number between one and 63. If the slash and number are left off, the program defaults to 63K of spooler memory. The program, therefore, allows you to establish a printer spooler memory tailored to your exact needs for any size between 1K and 63K of reserved memory. If you have not set up a spooler of sufficient size to take all of the file being sent to the printer, the system will act just as it did before the spooler program was set up until the remaining file to be sent to the printer is less than the reserved memory, then the spooler holds all of the file and your ready prompt appears.

When you have the ready prompt, you can continue to work on the program in memory while the spooler feeds the printer. This really speeds up the operation of listing programs, etc. I haven't put a stopwatch on the operation, but do know that it used to take my printer about 20 minutes to print out a 48K file, and that was more than long enough to get a fresh cup of coffee, a snack or whatever. Now with the printer spooler loaded, the ready prompt is returned in less than two minutes. On short files, it is almost immediate.

There are no commands required to implement the spooler after you have loaded the program. The spooler automatically takes any file being sent to the printer. It's that easy. To stop a print operation for any reason, just turn off the printer, hold down the CONTROL and SHIFT keys while pressing the hyphen key. This clears the spooler buffer and when the printer is turned on again, its memory is clear. You are now ready for the next new file to be sent to the printer.

This is a neat little program that operates just the way it is advertised and does it with no problems. It isn't memory hungry and is effortless to use and load. I give it very high marks and will say that it is a must for anyone doing any amount of word processing or program work where the printer is being tasked regularly. You cannot find a less expensive printer spooler.

(MichTron, 576 S. Telegraph Rd., Pontiac, MI 48053, 313-334-5700, \$34.95)

— Fred Clabuesch

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Avoiding Format Accidents

A simple DEBUG patch to FORMAT.COM will force a default to disk drive B: if no drive option is entered. This is handy for those of us who keep utility disks on drive

A: and work files on drive B: and may be mandatory for those with hard disks. The installation procedure is as follows:

```
A>DEBUG FORMAT.COM
-e131
0C67:0131 B4.
0C67:0131 B4.b0
0C67:0131 B4.b0 19.
0C67:0131 B4.b0 19.01
0C67:0131 B4.b0 19.01 CD
0C67:0131 B4.b0 19.01 CD.90
0C67:0131 B4.b0 19.01 CD.90 21.
0C67:0131 B4.b0 19.01 CD.90 21.90
-
-w
-q
```

Both DEBUG and FORMAT on the default drive
Enter Hex at displacement 131 Hex
DEBUG returns this
You enter b0 and space
DEBUG continues
Enter 01 and space
And continues
Enter 90 and space
And continues
This last time you enter 90 and RETURN
DEBUG is ambivalent
Tell DEBUG to write the changes out
After DEBUG tells you how many bytes were written, quit

Now when you enter only FORMAT, drive B: is automatically selected. To format a disk on drive A:, enter FORMAT A: and, of course, any other options.

This patch is for the version of FORMAT.COM for MS-DOS 2.11 only, and the 0C67 control section offset may not be the same on your system. Most likely a similar change may be made to MS-DOS 1.25, just in another

location. Use the unassemble command (U) in DEBUG to locate the correct point for the change. The MS-DOS 2.11 version was calling MS-DOS with interrupt 21H, function 19H, to get the current drive; this change forces drive B: instead.

*Roger L. Boese
Tokyo, Japan*

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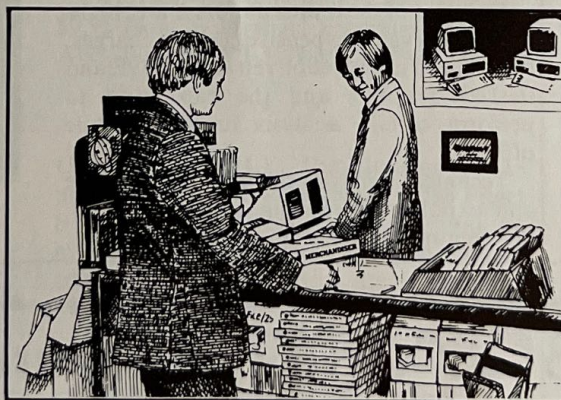
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SOFT TALK

A RECITAL. In "Soft Talk," (February '85, Page 66) there was mention of Key Software's *Player Piano*. The price that was quoted was for version I, which is no longer on the market.

There is now a version II which has improved tonal quality and dynamics, the ability to view the directory from within the program and more than 20 prerecorded songs on the diskette. Version II requires no hardware modifications or add-ons.

Player Piano version II is currently available for \$34.95 from Key Software Products, 440 Ninth Avenue, Menlo Park, CA 94025; (415) 364-9847.

* * *

SMARTKEY II PLUS, a keyboard redefinition utility, is a small program that resides in a computer's memory while other software is running. It is designed for writers, businessmen, programmers, etc., which allows users to produce words, phrases or sets of software commands in a single keystroke.

SmartKey II Plus allows you to assign more than 30,000 characters to a single key, define over 300 function keys on any

computer, display or define any key from within any other program, and save key definitions to disk for later use.

SmartKey II Plus is currently available for \$49.95 from Software Research Technologies, 3757 Wilshire Blvd., Suite 211, Los Angeles, CA 90010; (213) 384-5430.

* * *

TELESCAN ANALYZER and database is a stock analysis package for investors and analysts. This financial investment package combines to track technical and fundamental information on more than 7,000 stocks. All New York Exchange, American Exchange and a majority of NASDAQ over-the-counter stocks are listed. Access to the database is by standard telephone lines through a local Tymnet connection.

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trendlines, on-balance volume, relative strength and short interest. Fundamental analysis includes insider trading, earnings, dividends, book value, cash flow, capital spending, inflation adjustment and proprietary indicators.

Telescan Analyzer requires no computer experience, since separate menus accompany each graph and commands use only one key. It is currently available for \$395 from Telescan, Inc., 11011 Richmond Ave., Suite 600, Houston, TX 77042; (713) 952-1060.



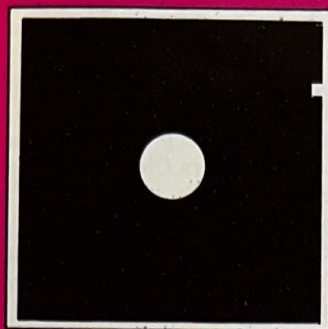
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A PEAR OF PROGRAMS. Two programs have been released by Prickly-Pear Software, *Forbidden Temple* and *Prickly-Pear Datapack*.

Forbidden Temple is an Adventure and role-playing game which allows you to create your own characters and instill them with intelligence, strength, and dexterity to outwit the monsters found in the dungeons of the forbidden temple. This game contains full-color graphics, window screen display and has a three-player option and five levels of play.

Prickly-Pear Datapack helps solve the problem of organizing important data and contains 20 commands which help define new databases, retrieve, sort or report, single or multiple record updating. This program will also allow you to output reports to your printer, console or disk file.

Forbidden Temple is currently available for \$39.95 and the *Prickly-Pear Datapack* is currently available for \$150. Both may be obtained from Prickly-Pear Software, 2640 N. Conestoga Ave., Tucson, AZ 85749; (602) 749-2864.

THE COMPUTER GOLD RUSH is a new guide which includes 101 ways to make money at home with your computer. It also includes current computer-related job listings.

The guide describes, in an easy-to-read form, the 101 most successful, proven, practical ways anyone who can operate a computer can make money. It also outlines the many kinds of full-time and part-time businesses that can be operated from the home by computer and includes a listing of more than 500 places to advertise your services and products, free.

The guide also features a section which lists companies offering a wide variety of computer-related jobs throughout the United States. This list is updated weekly. *The Computer Gold Rush* is currently

available for \$12.95 with a money-back guarantee from Pageant Publishing Company, P.O. Box 240334, Memphis, TN 38124.

OKI FONT-DO is a printer program which makes available four fonts for the Okidata 92/93 printer. It can be mixed with the printer's standard font or used alone and it works with any word processor or language on any MS/PC-DOS computer. Included in the four type styles are block, script, futuristic and italics.

Oki Font-Do also comes with a shell program for your own creations and can be used in double-width, compressed and 10 or 12 CPI modes, which allows more than 16 styles of type to choose from.

Oki Font-Do is currently available for \$9.95 from Wolfsangel Enterprises, Maple Ave., Building Y3-3, Hatfield, PA 19440.

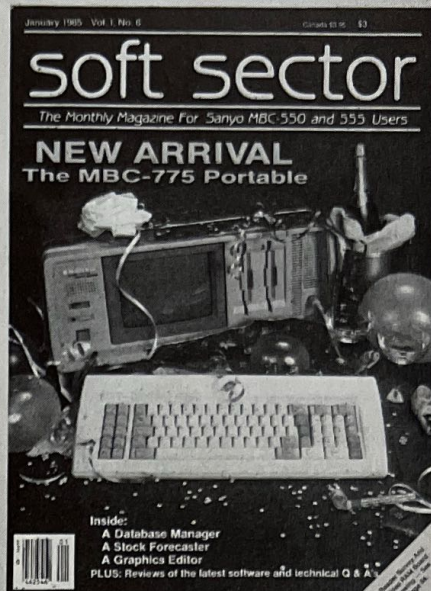
USER FRIENDLY. The librarian of the public domain software library of the Puget Sound Sanyo Users Group is making available to Sanyo users a public domain software catalog and diskettes containing public domain programs.

The PSUG is also interested in sharing and trading their software with other users groups on a diskette per diskette basis.

The Puget Sound Sanyo Users Group catalog is currently available for \$2.50 and the individual diskettes are available for \$7. Also, any individual interested in ordering diskettes or any group interested in trading software with PSUG should contact Charlie Quante, Puget Sound Sanyo Users Group, 1804 S. 19th St., Tacoma, WA 98405.

ARTISTIC FLAIR. The Sanyo New England Users Club has announced a nationwide Sanyo Computer Art Contest. Since the

soft sector



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Back copies of many issues of **SOFT SECTOR** are still available.

All back issues sell for the single issue cover price. In addition, there is a \$2 charge for the first issue plus 50 cents for each additional issue mailed in the U.S. When possible, issues are mailed U.P.S. The postage cost in Canada and Mexico is \$3 for the first issue and \$1 for each additional issue.

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The deadline for entries is September 1, 1985. Judges will be selected from sponsoring organizations and officers of the Sanyo New England Users Club.

Send the completed graphics files on a diskette marked with your name and address in a disk mailer with adequate postage to: Sanyo Art Contest, Sanyo New England Users Club, 99 School Street, Weston, MA 02193. Entry blanks will be available in the May issue of the SNEUC newsletter. Winning entries will be featured on the covers of the newsletter and offered to other Sanyo publications.

There will be a grand prize for the best work over all, first prizes for mono and color works, second prizes for mono and color works, and runner-up prizes. Prizes include a monitor, a Video RAM Board, an RS-232 port, software gift certificates and T-shirts.

Contest sponsors include Sanyo Business Systems Corp., Sanyo New England Users Club and developers of graphics packages.

For further contest information contact, R.E. Zapolin, 46 Asbury St., Lexington, MA 02173 or call Sanyo New England, (617) 891-1238.

* * *

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* * *

The products and services listed above are currently available for Sanyo personal computers and many will be reviewed in future issues of SOFT SECTOR.



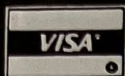
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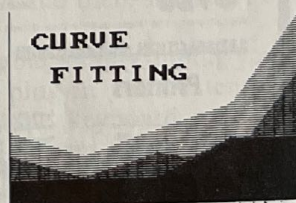
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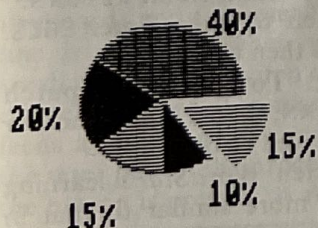
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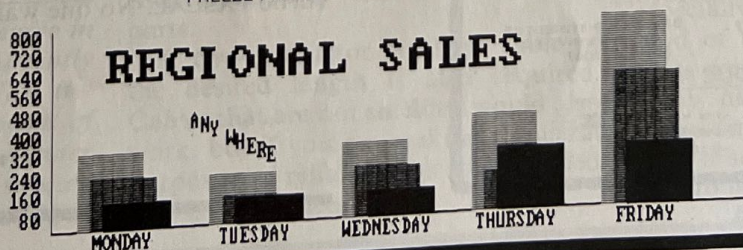


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Edlin Special Editing Keys

Editor:

While training myself on the Sanyo operating system using Danny Humphress' excellent series "Mastering MS-DOS," I ran into a problem with *EDLIN*. Some of the functions mentioned in the article did not do what they were supposed to do as described. Apparently different versions of MS-DOS utilize some of the function keys in different ways.

Using my MS-DOS Vers. 2.11 Reference Manual with particular reference to Table 7.1 on Page 7-5, I compiled a list of the special editing keys that are used with MS-DOS Ver. 2.11 and 1.25. You might warn your readers that they should experiment with the function keys used by their operating system to find out which ones do the required function.

Function	Key	Description	MS-DOS 1.25	MS-DOS 2.11
Copy one character	<copy1>	Copies one character from template to the new line.	PF1	PF1
Copy up to character	<copyup>	Copies all characters from the template to the new line up to the character specified.	PF2	PF2
Copy template	<copyall>	Copies all remaining characters in the template to the screen.	PF3	PF3
Skip one character	<skip1>	Does not copy (skips over) a character.	—	—
Skip up to character	<skipup>	Does not copy (skips over) the characters in the template up to the specified character.	PF4	PF4
Quit input	<void>	voids the current input; leaves the template unchanged.	PF6 or CTRL-X	PF10 or CTRL-X
Insert mode	<insert>	Enters/exits insert mode.	PF8 or INS	PF8
Replace mode	<replace>	Turns insert mode off; this is the default.	none*	PF8 toggle
New template	<newline>	Makes the new line the new template.	RETURN	RETURN

*Unable to find the key that will turn Ver. 1.25 insert mode off.

Note. The function keys for *EDLIN* Ver. 1.02 are the same as Ver. 2.15 when run under MS-DOS 2.11.

Ray C. Robinson
Lake Charles, LA

Helpful Hint . . .

Yet Another Patch For WordStar

Here is a patch for all *WordStar* users who feel that the DELETE key should delete the character beneath the cursor and the delete left key should delete the character left of the cursor.

First, using a backup copy of *WS.COM*, enter DEBUG *WS.COM*. Now we have to find the first patch address. Enter E49B. A 0D should be there. Type AE and then a space. Now you should see a 7E. Type 83 and then hit RETURN.

Only two more numbers are left to alter. Enter E6E6. A 08 should pop up. Type 13 and then a RETURN.

That completes the editing. To make the patch permanent, type a W and hit RETURN, then a Q and another RETURN. Your changes are now saved to disk.

Not only does this patch shorten *WordStar's* learning curve, it also makes the editing more similar to that in Turbo PASCAL. No one wants to learn two editors.

James Allen
Stevens Point, WI

* * *

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Make Your Own Keyboard Extension Cable

By John R. Kelty

Here is a simple project that I constructed the first day that I had my new Sanyo MBC-555. Of course, this will work with any of the Sanyo 550 series computers and does not change the machine itself in any way. The project is to build a simple extension cord for the keyboard. Unlike the IBM personal computer, I don't think the cable is sufficiently long on the Sanyo to make placement of the keyboard comfortable. Even now, my computer is sitting several feet from where I am typing, and if I didn't have this keyboard extension cord connected, I would be stretching the original cord to the limit.

I have found that you can use almost any length of cord that will reach in a normal size room, say up to about 20 feet. The keyboard is driven from an 8251 USART (get out your *Sanyo Operator's Guide*, pages 5-32 and 5-33) at 1200 Baud. The connections that you will find between the computer and the keyboard are +5 volts and ground, the data line (the 1200 Baud data from the keyboard) and the reset line. The reset line is activated when you press the small momentary switch on the left side of the keyboard. The reset input signal feeds a typical reset circuit that keeps the reset pin on the processor low until the button is pressed. A relatively large

capacitor and the draining diode assure a good quick repeat capability if you were to press the reset button or turn the machine off and on quickly.

One of the things that surprised me the most was that the data signal from the 8251 (located in the Sanyo computer itself) is connected to a transistor buffer and then to the speaker for that awful beep that you hear when you make an error in BASIC. Pins 2, 4, and the shield are grounded at the computer output connector, but the keyboard cable does not connect anything to Pin 2. The *Sanyo Parts Manual* shows this correctly in the schematic (FA6, sheet F section mapped by A and 6, just like reading a map) but the *Service Manual* does not show anything connected to Pin 4 (Page A-3). Since this is to be an extension cord anyway, the actual connections are not so important if you make all of them.

The cable may be constructed using the following parts from your Radio Shack store:

Part			
Quantity	Number	Description	Cost
1	274-003	5-Pin DIN Plug	\$1.49
1	274-006	5-Pin DIN Socket	\$1.49

Switchcraft also makes some similar parts.

A five-conductor shielded cable of the desired length is also required. Cables that are not shielded would also work, but if you are making a general purpose and reliable cable, the shielded wire is recommended.

To make building the cable easy, I just stripped each wire about an eighth of an inch and tinned all of the wires by applying a slight amount of solder to each. I used stranded cable, which is flexible and easy to move around, but spreads easily when you try to solder the wires to the connector pins. The tinning makes the wire stiff at the end and it is a lot easier to handle when trying to place all the wires on the connectors.

I used a vise (Vise-Grips or a steady friend's hand would also work) to hold the connector while I soldered on each lead. Be sure not to cross the left and right wires of the connectors when making your connections.

The pin numbers are marked, but it's easy to make a mistake. Just wire the cable pin-to-pin and there shouldn't be any problems.

To test the cable, simply unplug your keyboard and plug in your extension cable between the keyboard and the computer. The system should boot as normal and type as normal. If you do have problems, check to see that the NUM LOCK and GRAPH keys light when pressed. If they do not, then you most likely have the five-volt line or ground wired incorrectly. Also, try the reset button to verify that it is wired and working correctly.

I encourage you to try this project, especially if you have never done any kind of electronics work before. The parts are readily available for this and many other projects that I will be suggesting in the future, so if you don't have a soldering iron, now is a good time to purchase one.



(John Kelty holds a master's degree in electrical engineering and is currently the electronics supervisor for the University of Nebraska Department of Physics. His hobbies include computer speech synthesis. He may be contacted at 1440 N. 61st, Lincoln, NE 68505.)

If your collection is becoming as much a business investment as a hobby, this program will help you keep tabs on it

Of Butterflies And Bottle Caps

By Fred Blechman
Soft Sector Contributing Editor

Collecting is a hobby enjoyed by millions of people all over the world. The subject can be anything that suits the collector, from bottle caps to butterflies. Frequently, the "hobby" turns into a business investment.

The most common collections are stamps and coins, but in the last 10 years "collector's plates" — quality reproductions of beautifully painted plates — have become popular. Regardless of what you might be collecting, this program will help you evaluate that collection on a periodic basis.

DATA statements hold the identification, original cost and present value of each item in your collection. You can request the value of the entire collection or just those with "key" words. The totals of original cost, present value and the percentage of change are displayed and, if desired, output to your printer.

The program contains a handy "search" module you may want to use for other programs.

Running The Program

Figure 1 shows the screen display of a typical RUN. This is a BASIC program and can be entered from the keyboard or from SOFT SECTOR ON DISK.

Caps Only!

Before you go any further, press the LOCK key on your keyboard so that the red LED is lighted. This will put you in the all-capitals mode, since this program expects uppercase letters when you respond to prompts.

(Fred Blechman, an acknowledged authority on home computers, has written several articles and books related to microcomputers. He is self-taught in electronics and computer BASIC programming and specializes in writing for beginners.)

User Inputs

After the screen introduction, you are asked if you want printer output. Type 'N' and ENTER, which will bypass the printer. If you respond with a 'Y', the screen will remind you to turn on your printer. If you don't, the program will "freeze" at the first LPRINT instruction.

This program uses Bradford Exchange collector plate names and values, so it asks for the Bradford quote date. Before you run the program, you should always update the prices in the DATA statements, as I'll describe a little later. For now, practice with the program as it is. Enter the date of the last update.

Searching

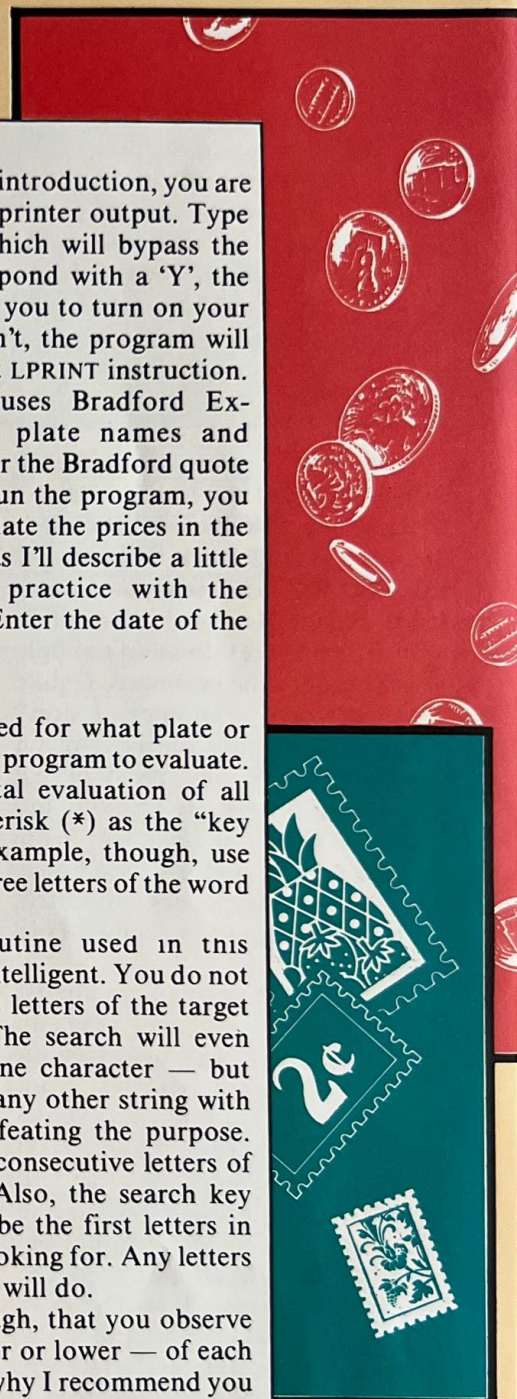
Now you're asked for what plate or plates you want the program to evaluate. If you want a total evaluation of all items, use the asterisk (*) as the "key word." For this example, though, use "WIZ," the first three letters of the word "Wizard."

The search routine used in this program is fairly intelligent. You do not need to use all the letters of the target "string" (word). The search will even work with only one character — but it will also "find" any other string with that character, defeating the purpose. Use at least three consecutive letters of the target word. Also, the search key does not have to be the first letters in the word you're looking for. Any letters in the target word will do.

Be careful, though, that you observe the "case" — upper or lower — of each character. That's why I recommend you use only capital letters.

The Results

The program proceeds down the DATA statements, reading and comparing the keywords to see if they are what you want. When a keyword is "matched" to the search, the accompanying values are displayed, together with a calculated percentage change. If the printer has been selected, you'll get the same output on the printer.



Finally, when the DATA is exhausted, the program draws a line, prints totals for original cost and present value, and calculates an average percentage of change.

Why Bother?

If you just have a few collector items, this program would be overkill. When the collection gets large, a program of this sort can provide necessary evaluation information for tax and investment purposes. You have to be the judge as to when this program might be more useful than three- by five-inch file cards. In any case, this program illustrates a simple approach to DATA evaluation without using disk files, and the search subroutine can be used in other programs.

Customizing For Your Use

You don't have the Bradford plates I have, so the program as it stands, has no value to you. However, it can

be easily modified to handle whatever collection you do have.

The DATA statements, as shown in Listing 1, are the "key" to using your own information. The format is:

Line number DATA Description, Original Cost, Present Value

Don't forget the commas where shown and use an asterisk as the first character of each description. The last DATA line must be like program line 1610: Z,0,0. That's about all there is to it.

Updating

Using the Sanyo 550/555 built-in BASIC full-screen editor makes it easy to update the present values. Just LIST the DATA statements on the screen, about 20 at a time, and use the cursor keys on the numeric keypad to position the cursor. You can delete characters with the INS/DEL key and insert blank spaces using the same key with either

SHIFT key. Regular keystrokes overwrite the existing character at that location. This remarkably intelligent editor keeps track of the last changes you make, and when you press BREAK, the program is modified.

SAVE For Next Time

When you've completed the DATA, SAVE "COLLECT" (or whatever filename you decide to use) to update your program disk file. From then on, the "new" DATA will be loaded in with the program.

Program Modules

100-330	Program introduction and inputs
400-430	Print headings
500-590	String search and print
600-640	Print totals and average percent change
1000-1610	DATA

The listing: COLLECT.BAS

```

100 REM *****
110 REM *           Collection Evaluator Program           *
120 REM *           For Sanyo MBC 550/555                 *
130 REM *           (C) Copyright Fred Blechman 1984      *
140 REM *****
150 CLS : PRINT : PRINT TAB(10) "           COLLECTOR PLATE EVALUATION PROGRAM"
160 PRINT : PRINT TAB(10) "           SEE DATA STATEMENTS FOR SAMPLE ENTRIES, WHICH"
170 PRINT TAB(10) "INCLUDE PLATE NAME, ISSUE PRICE AND CURRENT PRICE. THESE"
180 PRINT TAB(10) "DATA STATEMENTS MUST HAVE THE CURRENT PRICE UPDATED EACH"
190 PRINT TAB(10) "TIME THE PROGRAM IS USED. BRADFORD EXCHANGE FIGURES ARE USED."
200 PRINT TAB(10) ".....PLATE NAMES MUST NOT EXCEED 14 CHARACTERS!"
300 PRINT : INPUT "DO YOU WANT PRINTER OUTPUT (Y/N)";P$
310 IF P$="Y" THEN PRINT :PRINT TAB(22) "***** TURN ON PRINTER! *****"
320 PRINT : INPUT "BRADFORD QUOTE DATE (M/D/Y)";B$
330 PRINT : INPUT "WHAT PLATE(S) ARE YOU LOOKING FOR (* FOR ALL)";A$
400 X= LEN (A$):CT=0:RT=0
410 CLS : PRINT : PRINT "DESCRIPTION","ISSUE PRICE",B$;" VALUE","% CHANGE"
420 IF P$="Y" THEN LPRINT "DESCRIPTION","ISSUE PRICE",B$;" VALUE","% CHANGE"
430 RESTORE
500 READ W$,C,V
510 IF W$="Z" THEN 600
520 FOR N=1 TO 20
530 IF A$= MID$ (W$,N,X) THEN 560
540 NEXT N
550 IF N>20 THEN 500
560 P=(V/C)-1:P= INT (P*100+.5): PRINT W$,C,V,P
570 IF P$="Y" THEN LPRINT W$,C,V,P
580 CT=CT+C:RT=RT+V
590 GOTO 500
600 PRINT STRING$ (63,"-"): IF P$="Y" THEN LPRINT STRING$ (63,"-")
610 PT=(RT/CT)-1:PT= INT (PT*100+.5)
620 PRINT "          TOTALS: ",CT,RT,PT
630 IF P$="Y" THEN LPRINT "          TOTALS: ",CT,RT,PT

```


640 END

1000 DATA *LAFAYETTE #1,14.82,45
 1010 DATA *LAFAYETTE #2,19.82,53
 1020 DATA *LAFAYETTE #3,19.82,44
 1030 DATA *LAFAYETTE #4,19.82,55
 1040 DATA *LAFAYETTE #5,19.82,65
 1050 DATA *LAFAYETTE #6,19.82,48
 1060 DATA *NOEL '75,24.32,101
 1070 DATA *NOEL '76,24.32,33
 1080 DATA *NOEL '77,24.32,41
 1090 DATA *NOEL '78,26.81,28
 1100 DATA *NOEL '79,26.81,30
 1110 DATA *NOEL '80,28.74,29
 1120 DATA *NOEL '81,28.74,36
 1130 DATA *NOEL '82,30.74,30.74
 1140 DATA *ARC TRIOMPHE,22.94,24
 1150 DATA *NOTRE DAME,24.94,24.94
 1160 DATA *PLACE CONCORDE,24.94,24.94
 1170 DATA *WOMEN #1,17.67,39
 1180 DATA *WOMEN #2,22.74,32
 1190 DATA *WOMEN #3,22.74,29
 1200 DATA *WOMEN #4,22.74,28
 1210 DATA *WOMEN #5,22.74,28
 1220 DATA *WOMEN #6,22.74,28
 1230 DATA *WOMEN #7,22.74,28
 1240 DATA *WOMEN #8,22.74,28
 1250 DATA *WOMEN #9,22.74,28
 1260 DATA *WOMEN #10,22.74,28

1270 DATA *RUMPELSTILZ,23,23
 1280 DATA *REPUNZEL,25,25
 1290 DATA *REPUNZEL(2),25,25
 1300 DATA *PENS. MADONNA,45,52
 1310 DATA *INCOLAY #1,65,67
 1320 DATA *INCOLAY #2,65,71
 1330 DATA *INCOLAY #3,65,65
 1340 DATA *TOMMY CLOWN,29.5,29.5
 1350 DATA *WIZARD #1,19,204
 1360 DATA *WIZARD #2,19,41
 1370 DATA *WIZARD #3,19,43
 1380 DATA *WIZARD #4,19,34
 1390 DATA *WIZARD #5,19,32
 1400 DATA *WIZARD #6,19,26
 1410 DATA *WIZARD #7,19,25
 1420 DATA *WIZARD #8,24,24
 1430 DATA *WIND #1,21.50,258
 1440 DATA *WIND #2,21.5,103
 1450 DATA *WIND #3,21.5,42
 1460 DATA *WIND #4,23.50,24
 1470 DATA *ROCK.REFL.,24.5,38
 1480 DATA *ROCK.PRIDE,24.5,27
 1490 DATA *ROCK.PARTY,24.5,29
 1500 DATA *ROCK.COOKING,25.5,25.5
 1510 DATA *ROCK.TOY,14.50,262
 1520 DATA *ROCK.COBBLER,19.50,155
 1530 DATA *ROCK.LIGHT.,19.50,108
 1540 DATA *ROCK.SHIP,19.50,60

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 1560 DATA *ROCK.MUSIC,19.5,28
 1570 DATA *ROCK.ATTIC,19.50,25
 1580 DATA *ROCK.SHORE,22.50,22.50
 1590 DATA *ROCK.PORCH,22.5,22.5
 1600 DATA *AMWAY #1,29.99,29.99
 1610 DATA Z,0,0

Figure 1: Typical Run.

COLLECTOR PLATE EVALUATION PROGRAM

SEE DATA STATEMENTS FOR SAMPLE ENTRIES, WHICH
 INCLUDE PLATE NAME, ISSUE PRICE AND CURRENT PRICE. THESE
 DATA STATEMENTS MUST HAVE THE CURRENT PRICE UPDATED EACH
 TIME THE PROGRAM IS USED. BRADFORD EXCHANGE FIGURES ARE USED.
PLATE NAMES MUST NOT EXCEED 14 CHARACTERS!

DO YOU WANT PRINTER OUTPUT (Y/N)? N

BRADFORD QUOTE DATE (M/D/Y)? 12/31/82

WHAT PLATE(S) ARE YOU LOOKING FOR (* FOR ALL)? WIZ

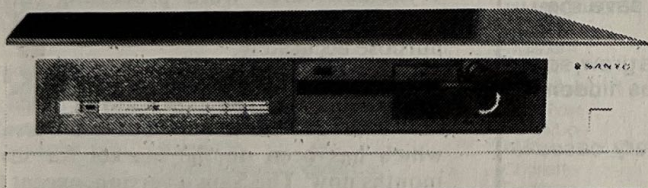
DESCRIPTION	ISSUE PRICE	12/31/82 VALUE	% CHANGE
*WIZARD #1	19	204	974
*WIZARD #2	19	41	116
*WIZARD #3	19	43	126
*WIZARD #4	19	34	79
*WIZARD #5	19	32	68
*WIZARD #6	19	26	37
*WIZARD #7	19	25	32
*WIZARD #8	24	24	0

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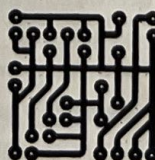
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- 2) **The program contains bugs.** To date no program bugs have been reported by any of the users of *The Disk Calculator*. Moreover, a warranty is provided that covers any legitimate bug that is found. The "major bug" that the reviewer claimed he found, may be called a minor limitation but certainly not a bug. The multi-level chaining, as performed by the reviewer, obviously does not work since the accumulating memory on the addition/subtraction line remains in memory until cleared by the user.

- 3) **The program does not provide greater than six decimal place precision.** The reviewer may have been surprised by this fact, but any user shouldn't, since it's clearly stated in our product literature. It was determined during the design phase that six decimal precision is sufficient in the majority of business applications. We will consider expanding the number of decimal places in our next release.
- 4) **The exponent function is very limited since the exponent can only be a positive integer.** How many accounting applications require a negative or fractional



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exponent? Certainly not enough to call this a major limitation.

- 5) ***The Disk Calculator*** is clumsy and not easy to use on the **MBC 550**. The program was designed for the IBM PC where function keys involve only one key stroke. It's the design features of the Sanyo keyboard that make ***The Disk Calculator*** somewhat clumsy to use. Admittedly, the line-oriented nature of the program will retard the speed of an experienced desktop calculator person. Using the operational keys mentioned by the reviewer is ruled out from the beginning since certain keys involve the use of the **SHIFT** key and therefore would provide no speed advantage.

I would like to mention three noteworthy features that were omitted in the review:

- 1) The program provides the printing of running totals — a feature that can be useful in many ways.
- 2) The program provides the ability to number all addition/subtraction entries.
- 3) The program provides 18 digit results.

In summary, I think the review of our product, as if it were an all-in-one calculator — a hand-held calculator, a desktop calculator, a scientific calculator, a statistical calculator is an unfair one. Nowhere did the reviewer compare it to any other software accounting calculator. Hand-held calculators are simply inadequate when heavy-duty accounting work is required. Most standard desktop calculators do have an ease-of-use advantage over any software calculator. This, however, is mainly due to the limitations of the computer system's keyboard and not the software.

*Bob LoVerme
President, RJL Systems
Milford, CT*

Editor:

We appreciated your review of *W-ED*, WyndhamWare's word processing editor. We thought the review described *W-ED*'s purpose accurately.

We were in the process of reviewing and revising all *W-ED* documentation based on user feedback from our IBM PC version, which has been on the market for seven months now. The Sanyo version, except for some keyboard and video compatibility issues, is the same.

We somehow confused the editorial staff with our various phone numbers. The phone number published in the review is the private business number of WyndhamWare's marketing consultant instead of our public number. WyndhamWare's public number is (206) 643-4045.

We have to admit that it certainly is a direct way to giving marketing people feedback! However, we would prefer our calls to come to (206) 643-4045.

*Earl Wyndham
Wyndham Ware
Renton, WA*

Editor's Note: Our apologies for getting the lines crossed.

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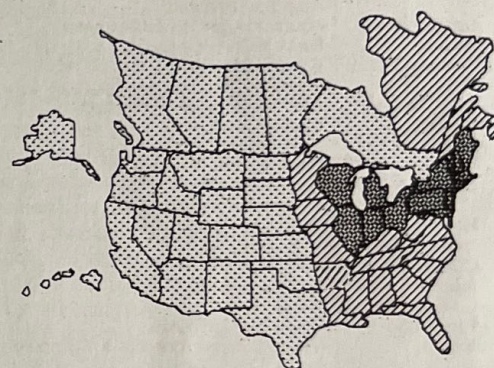
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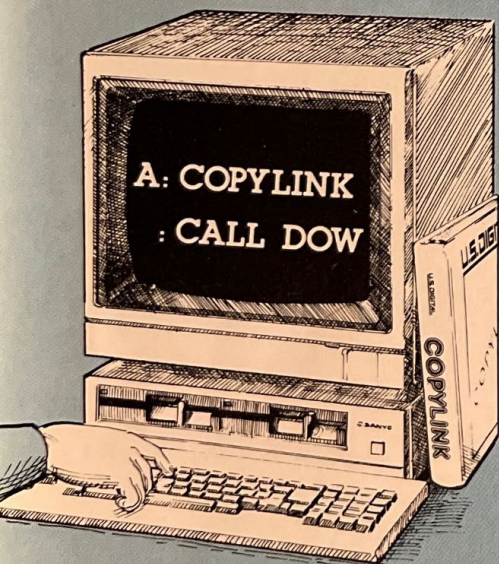
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